IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT EXAMINING OPERATION

ATTN'Y DOCKET NO.: ETS-TCA

APPLICATION OF: PETER BRITTINGHAM, MARY E. MORLEY, MARK K. SINGLEY, MARK G. ZELMAN, KRISHNA N. JHA, JAMES H. FIFE, ROBERT L. RARICH, IRVIN R. KATZ, RANDY E. BENNETT

FOR: COMPUTER-BASED TEST-ITEM GENERATION AND CLONING

DRAWINGS

(FIGS. 1-73, 73A-73E, 74-79, 80A-80C, 81, 82A-82C, 83-97, 98A-98B, 99-105, 106A-106B, 107)

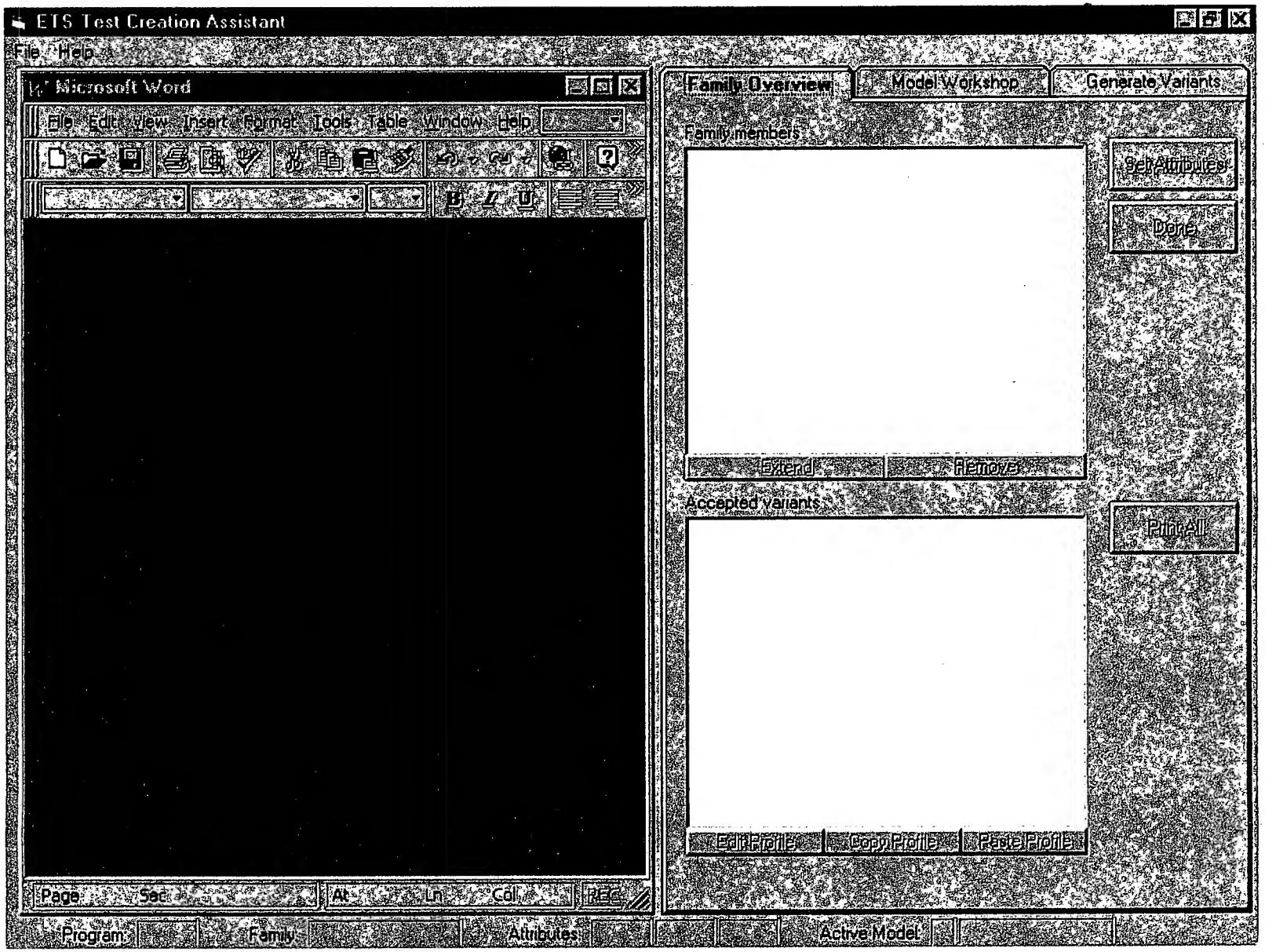

ETS Test Creation Assistant
File Help
Microsoft Word
File Edit View Insert Format Tools Table Window Help
Page Sec At Ln Col REC
Family Overview
Model Workshop
Generate Variants
Family members
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program
Family
Attributes
Active Model

FIG. 1

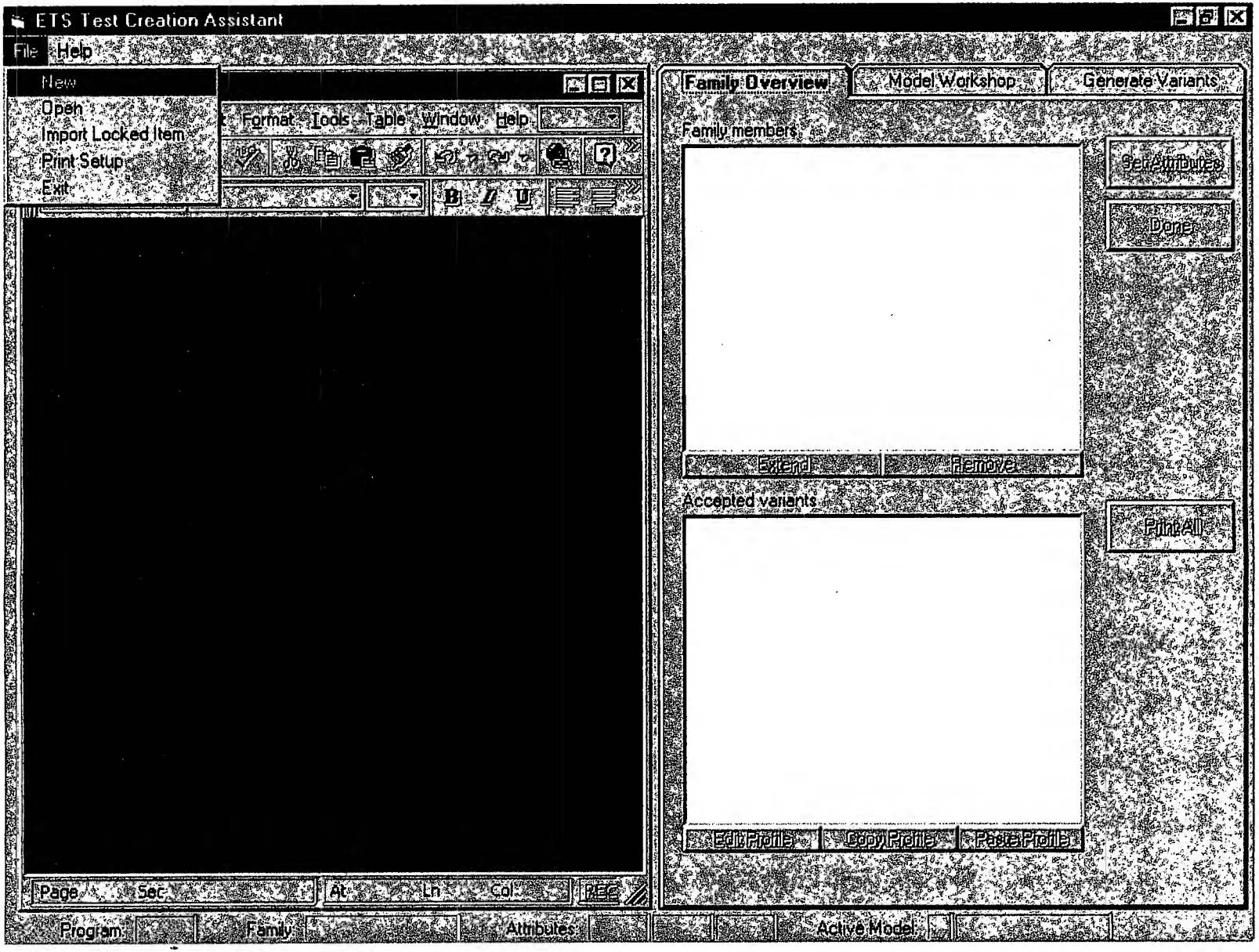

ETS Test Creation Assistant
File
Help
New
Open
Import Locked Item
Print Setup
Exit
Format
Tools
Table
Window
Help
Page
Sec
At
Ln
Col
REC
Program
Family
Attributes
Active Model
Family Overview
Model Workshop
Generate Variants
Family members
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile

FIG. 2

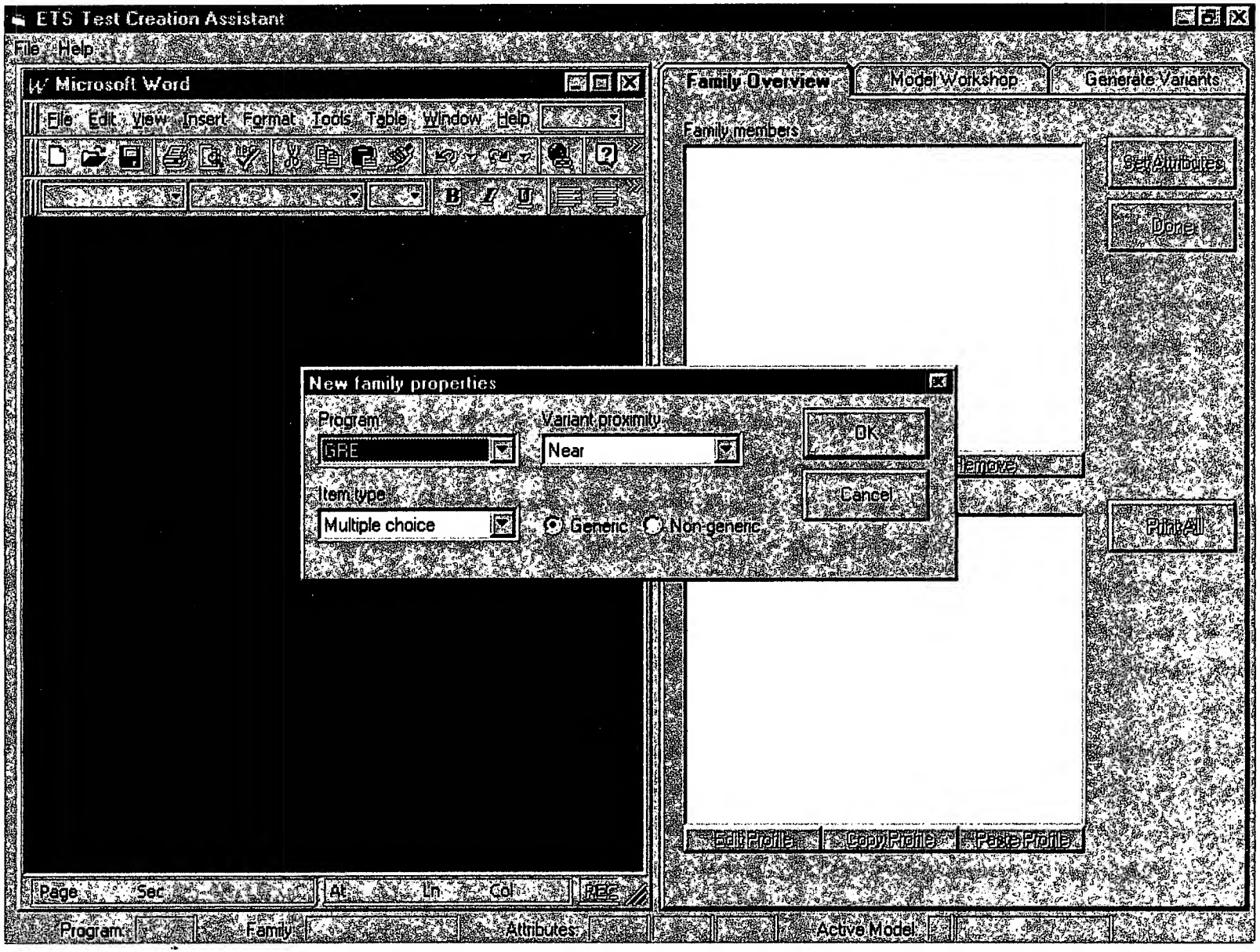

ETS Test Creation Assistant
File Help
Microsoft Word
File Edit View Insert Format Tools Table Window Help
Page Sec At Ln Col REC
Family Overview
Model Workshop
Generate Variants
Family members
Set Attributes
Done
New family properties
Program
GRE
Variant proximity
Near
OK
Cancel
Item type
Multiple choice
Generic
Non-generic
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
Program
Family
Attributes
Active Model

FIG. 3

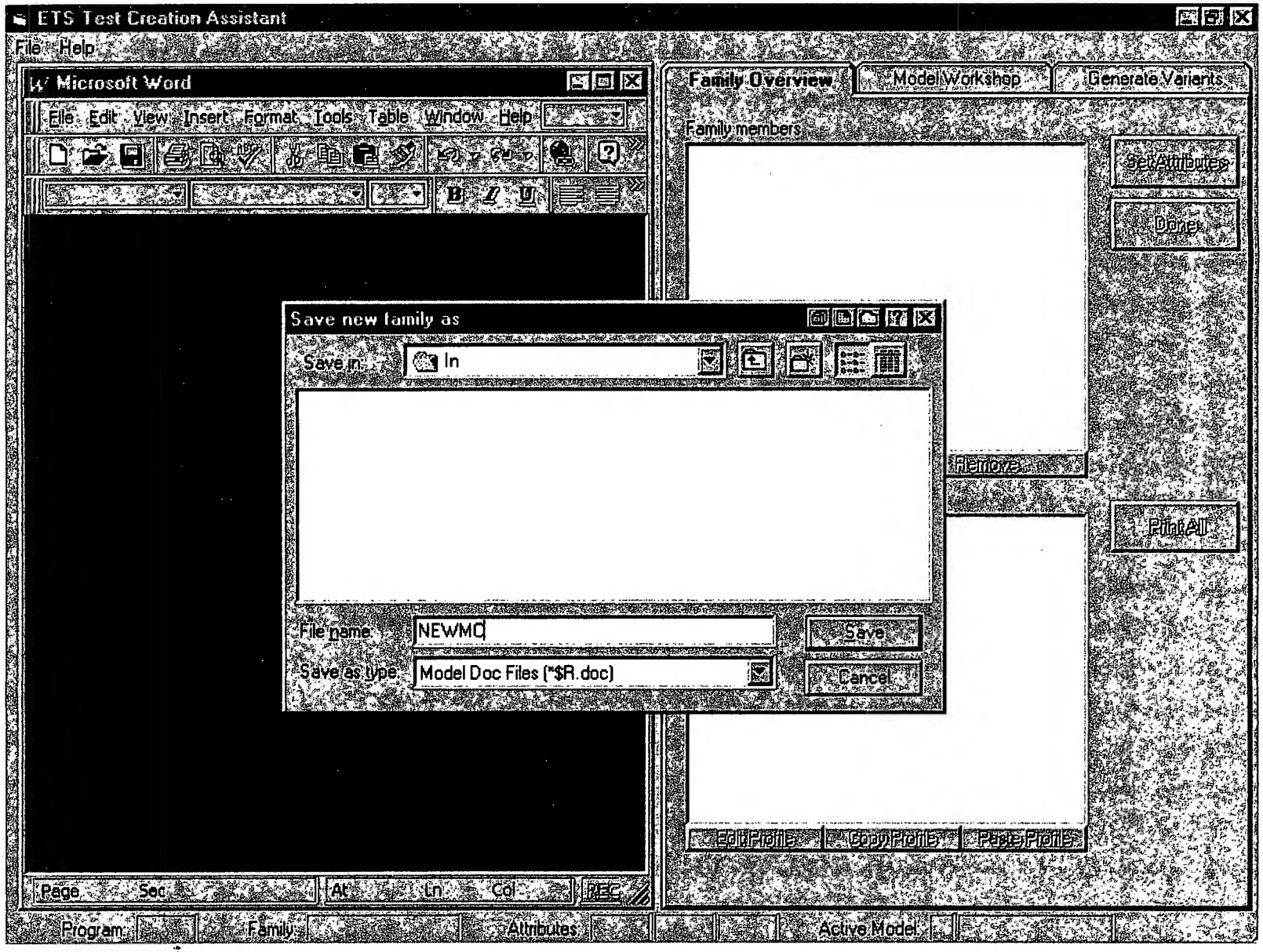

ETS Test Creation Assistant
File Help
Microsoft Word
File Edit View Insert Format Tools Table Window Help
Family Overview
Model Workshop
Generate Variants
Family members
Set Attributes
Done
Save new family as
Save in:
In
File name:
NEWMD
Save
Save as type:
Model Doc Files (*$R.doc)
Cancel
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
Page
Sec
At
Ln
Col
REC
Program
Family
Attributes
Active Model

FIG. 4

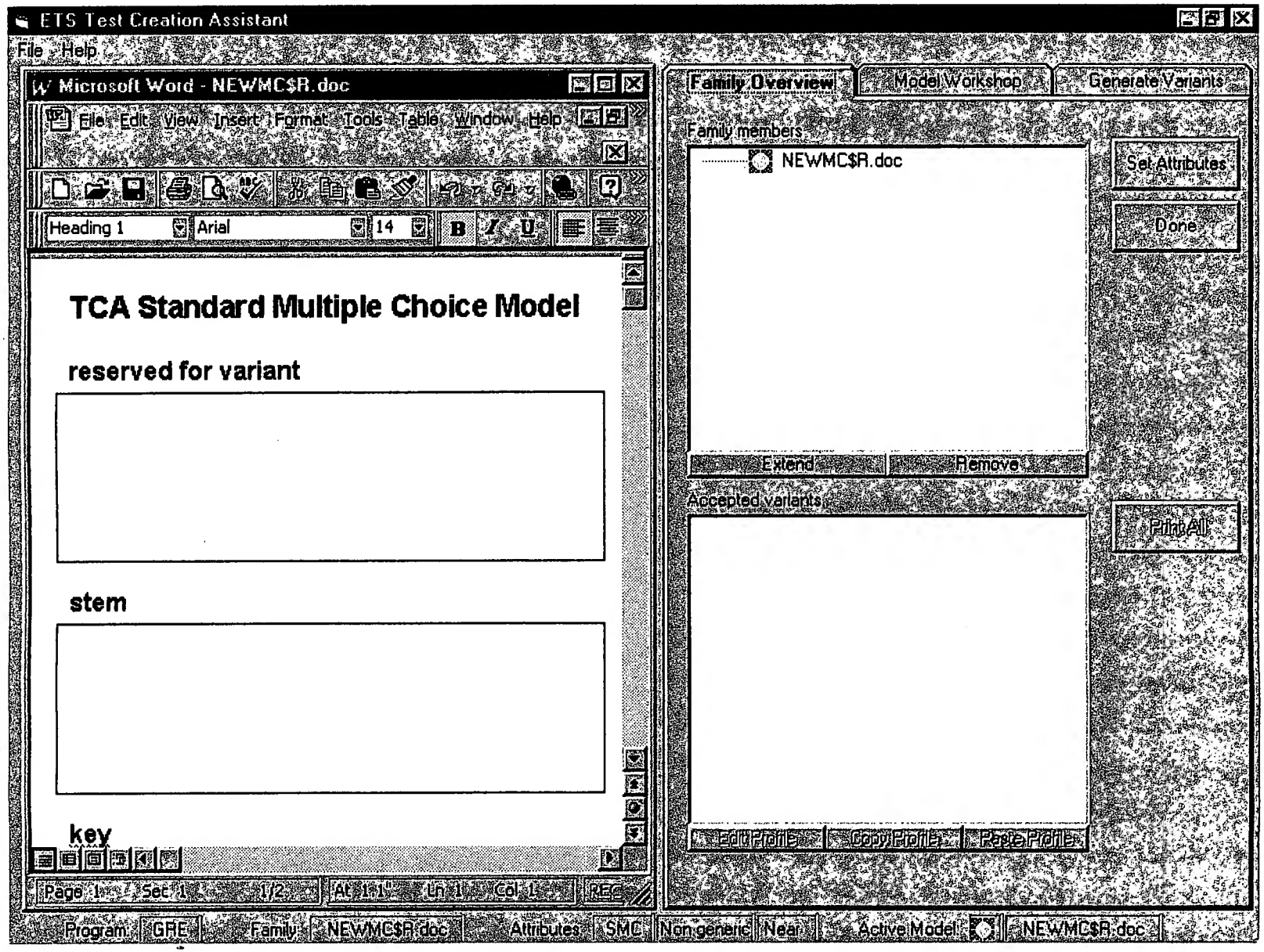

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
key
Page 1
Sec 1
1/2
At 1"
Ln 1
Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Page Profile
Program
GRE
Family
NEWMC$R.doc
Attributes
SMC
Non generic
Near
Active Model
NEWMC$R.doc

FIG. 5

TCA Standard Multiple Choice Model

reserved for variant

stem

key

Key

distractor1

Distractor1

distractor2

Distractor2

distractor3

Distractor3

distractor4

Distractor4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch
Pad
Area

FIG. 6

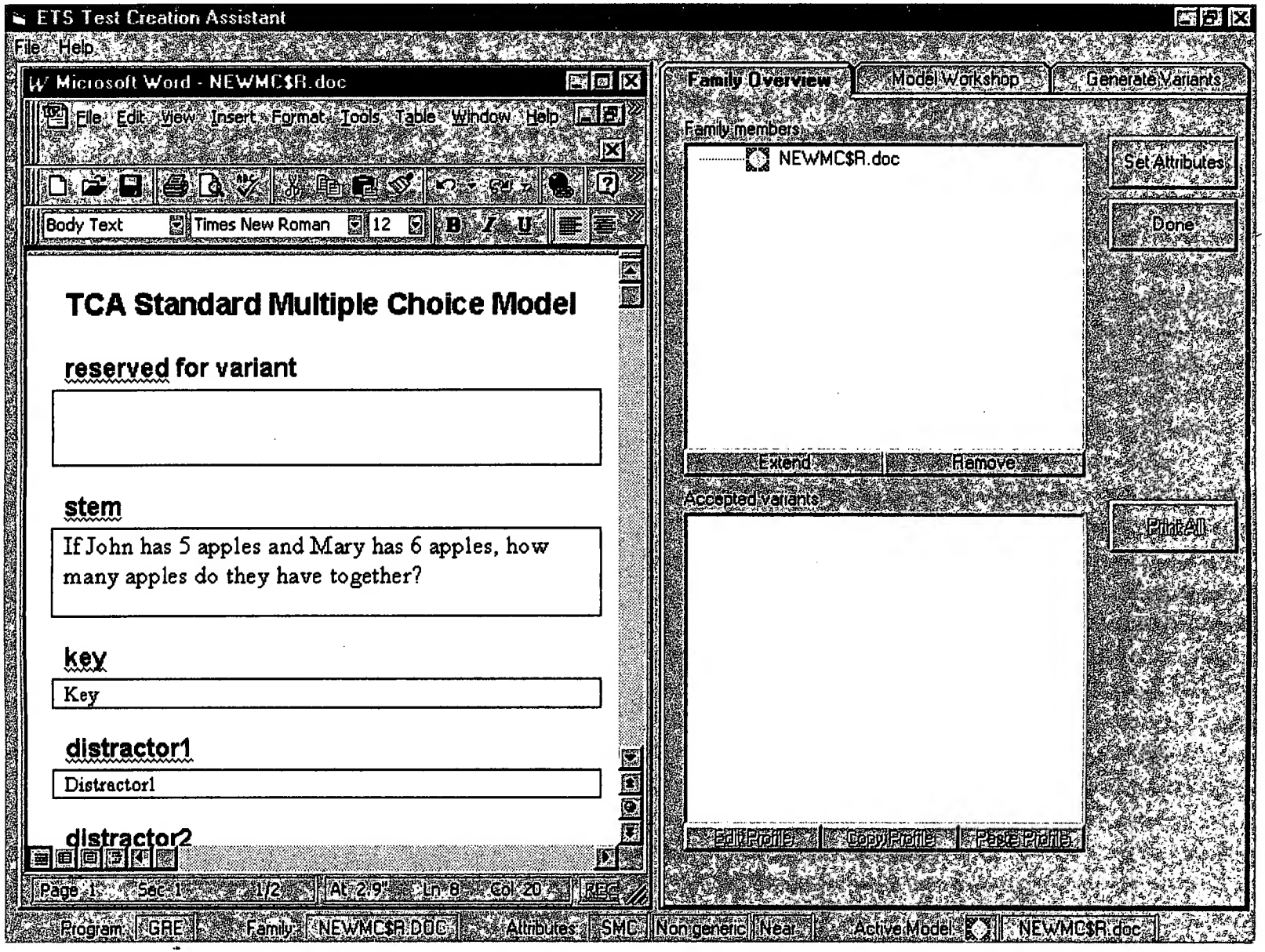

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Body Text
Times New Roman
12
TCA Standard Multiple Choice Model
reserved for variant
stem
If John has 5 apples and Mary has 6 apples, how many apples do they have together?
key
Key
distractor1
Distractor1
distractor2
Page 1 Sec 1 1/2 At 2.9" Ln 8 Col 20 REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non-generic Near
Active Model:
NEWMC$R.doc

FIG. 7

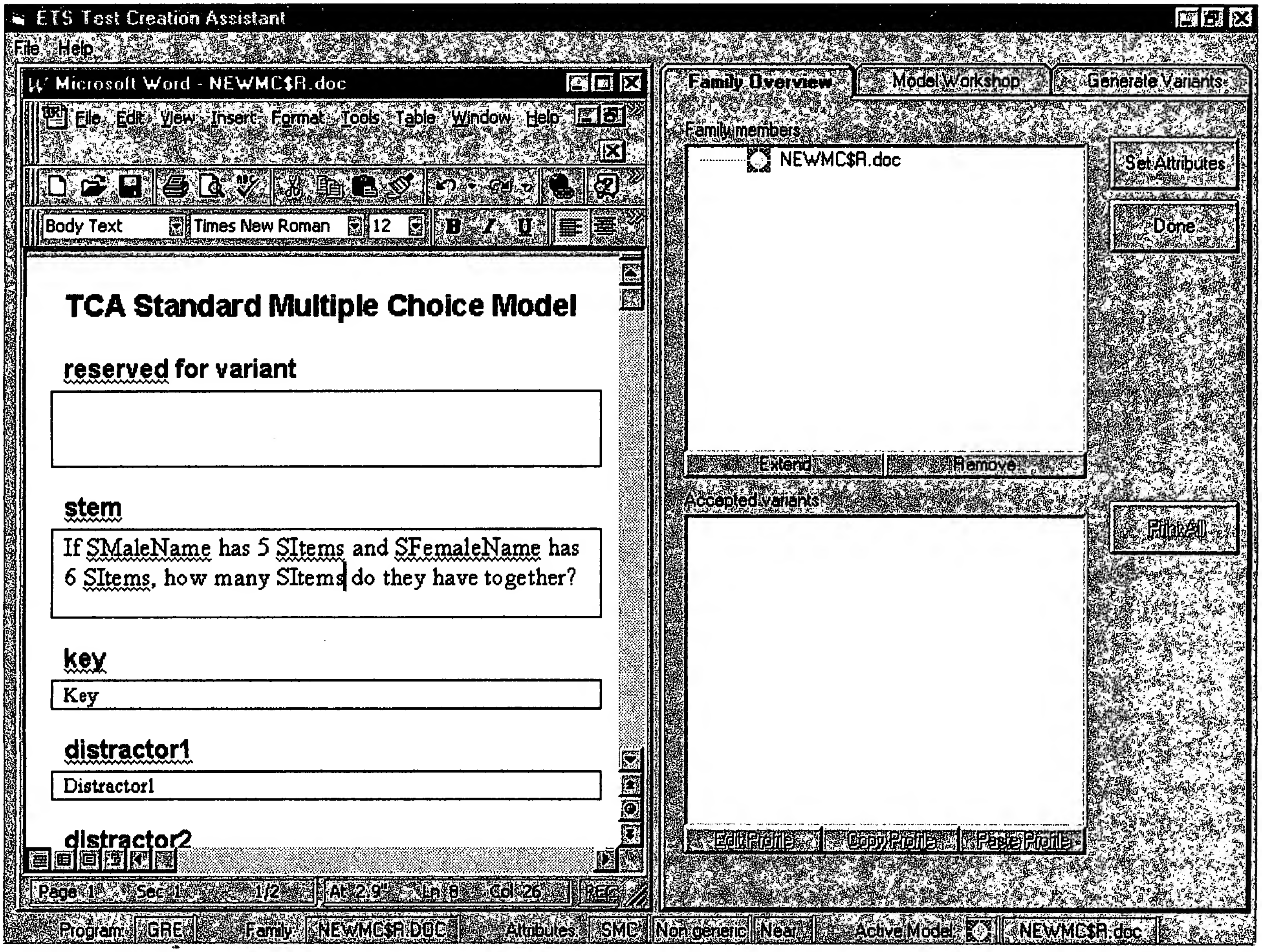

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Body Text
Times New Roman
12
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has 5 SItems and SFemaleName has 6 SItems, how many SItems do they have together?
key
Key
distractor1
Distractor1
distractor2
Page 1 Sec 1 1/2 At 2.9" Ln 8 Col 26 REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Edit Profile
Copy Profile
Paste Profile
Program: GRE Family NEWMC$R.DOC Attributes SMC Non generic Near Active Model NEWMC$R.doc

FIG. 8

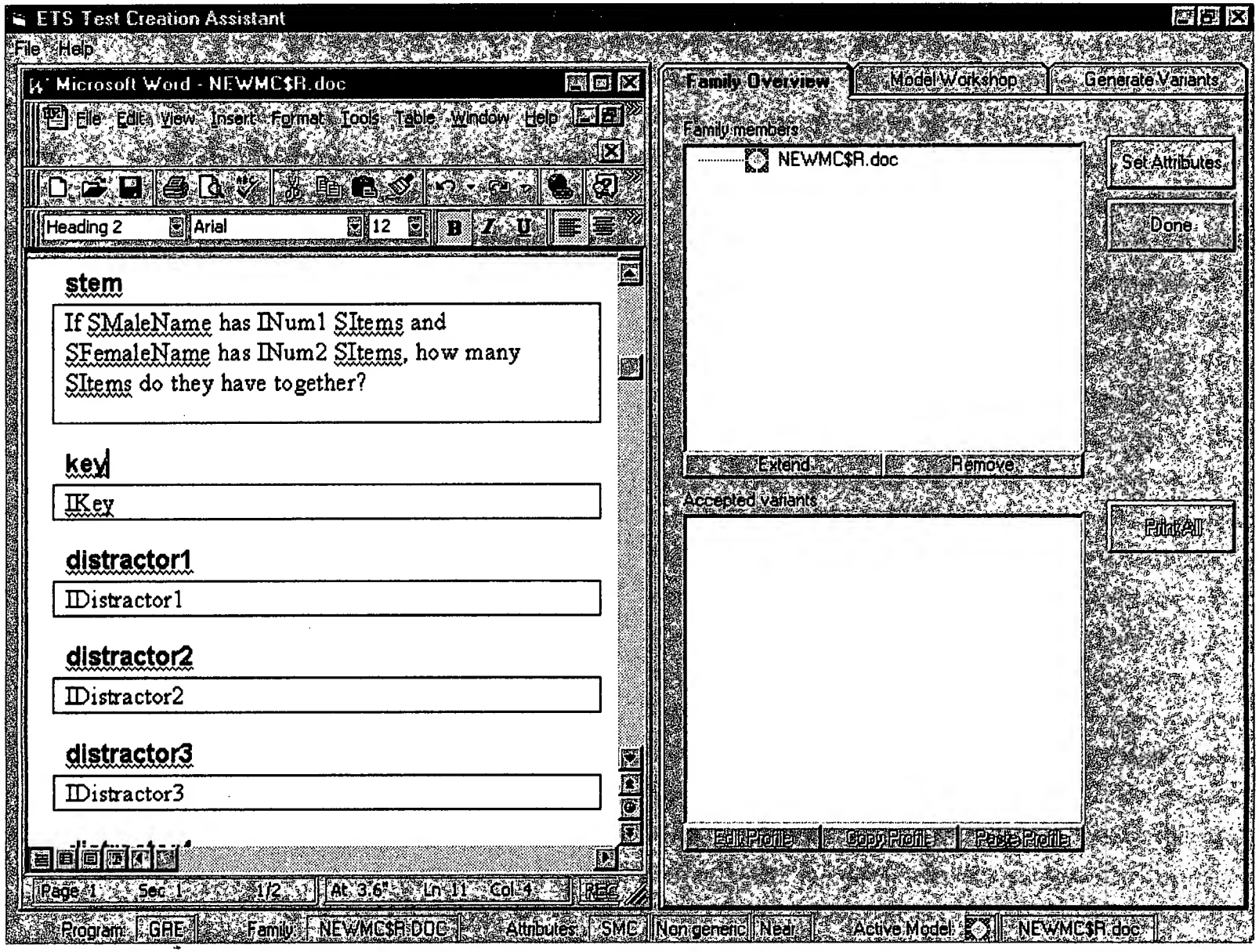

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2 At 3.6" Ln 11 Col 4 REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program GME Family NEWMC$R.DOC Attributes SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 9

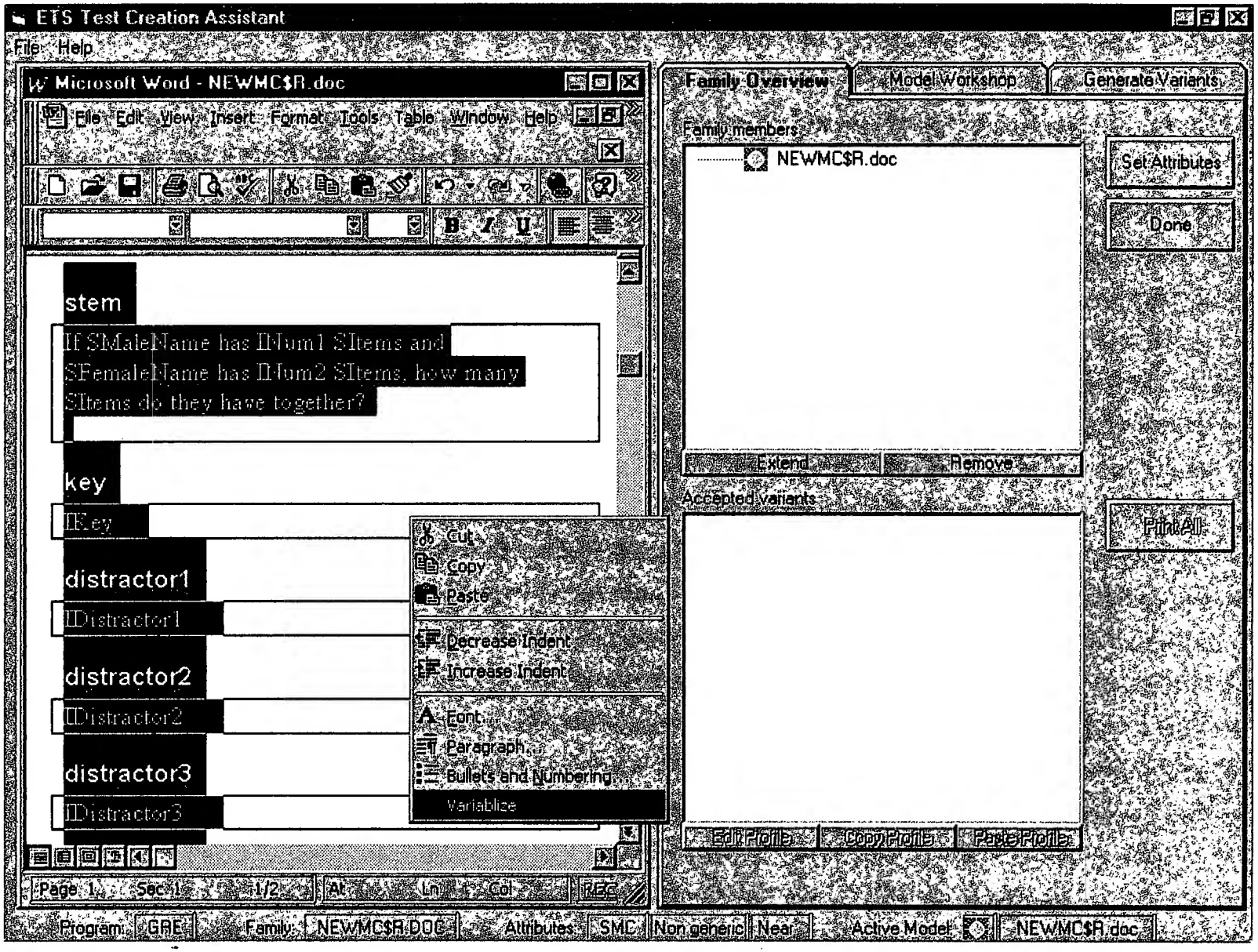


FIG. 10

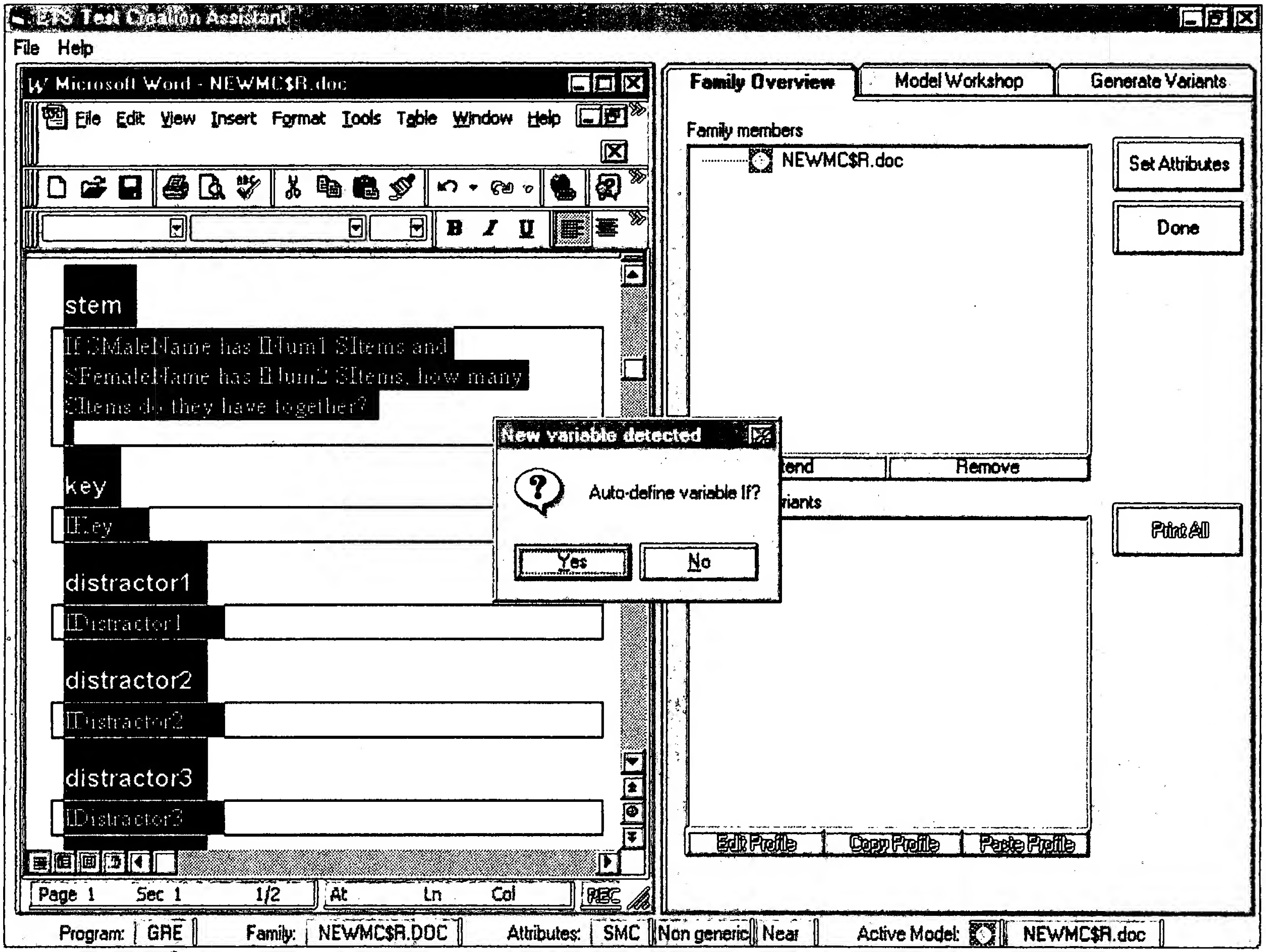


FIG. 11

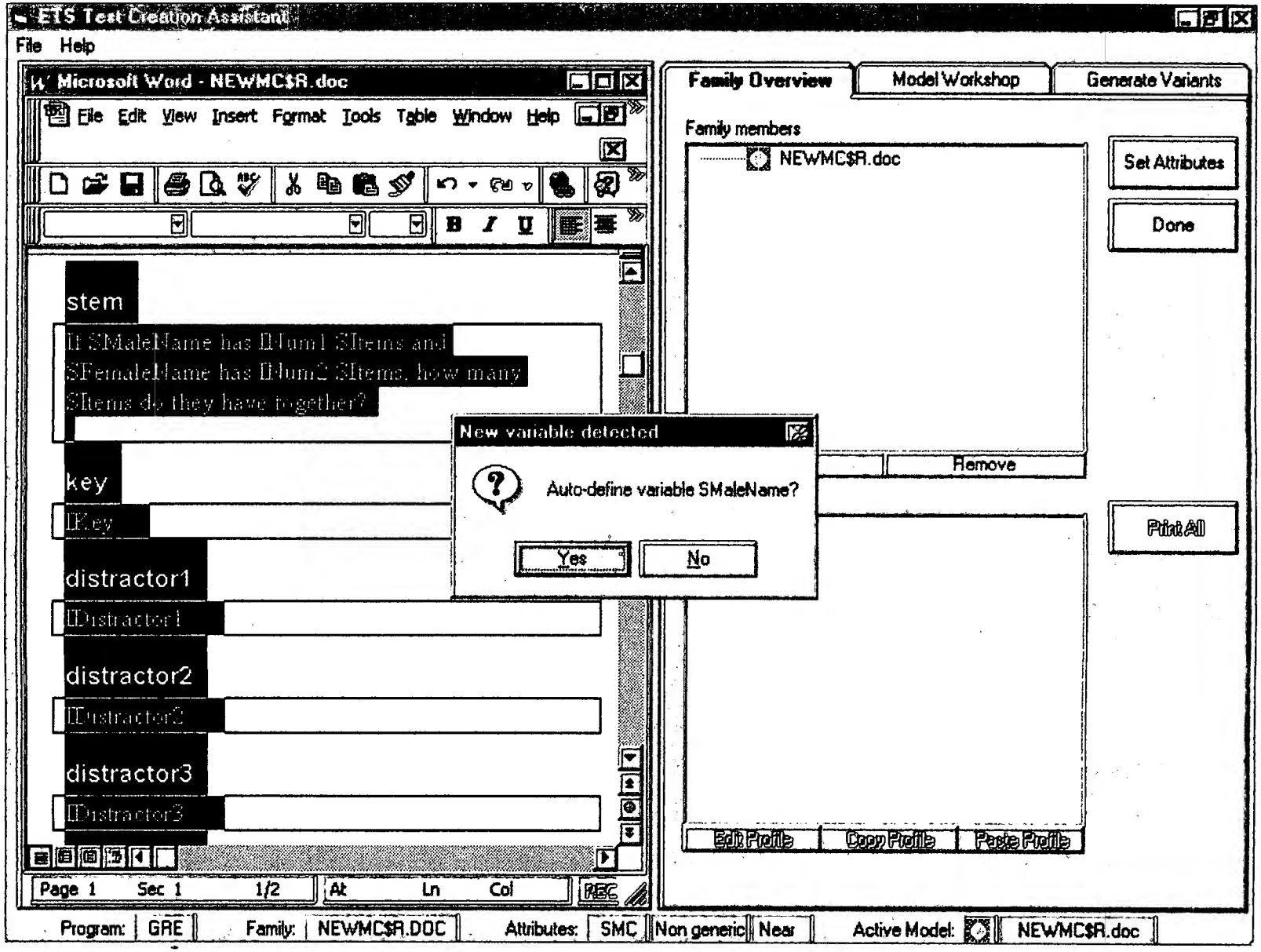

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2 At Ln Col REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Done
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
New variable detected
Auto-define variable SMaleName?
Yes
No
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 12

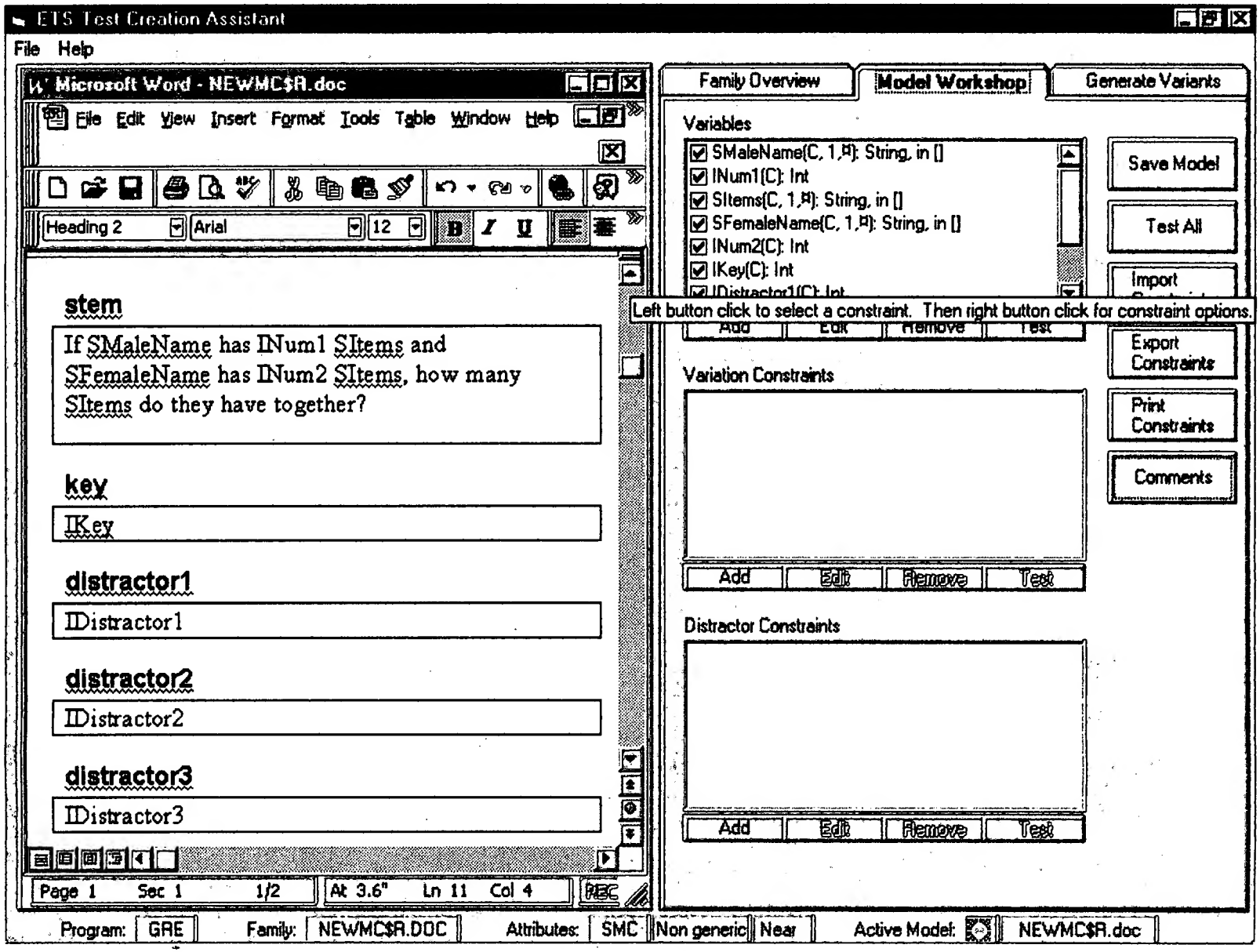

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 3.6" Ln 11 Col 4
REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,*): String, in []
INum1(C): Int
SItems(C, 1,*): String, in []
SFemaleName(C, 1,*): String, in []
INum2(C): Int
IKey(C): Int
Left button click to select a constraint. Then right button click for constraint options.
Add Edit Remove Test
Save Model
Test All
Import
Export Constraints
Print Constraints
Comments
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 13

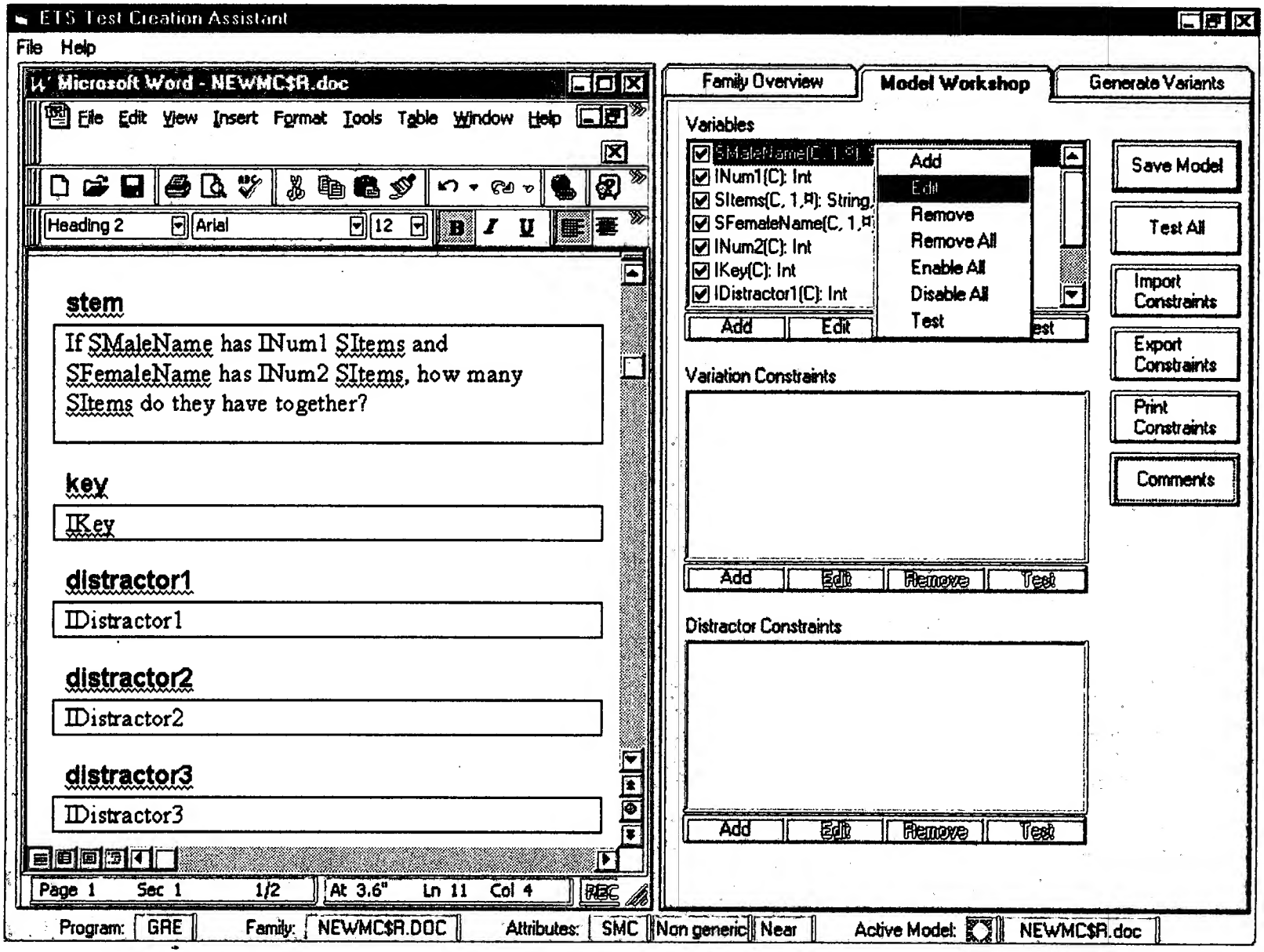

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 3.6" Ln 11 Col 4
REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String
INum1(C): Int
SItems(C, 1,R): String
SFemaleName(C, 1,R
INum2(C): Int
IKey(C): Int
IDistractor1(C): Int
Add
Edit
Remove
Remove All
Enable All
Disable All
Test
Add
Edit
Variation Constraints
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 14

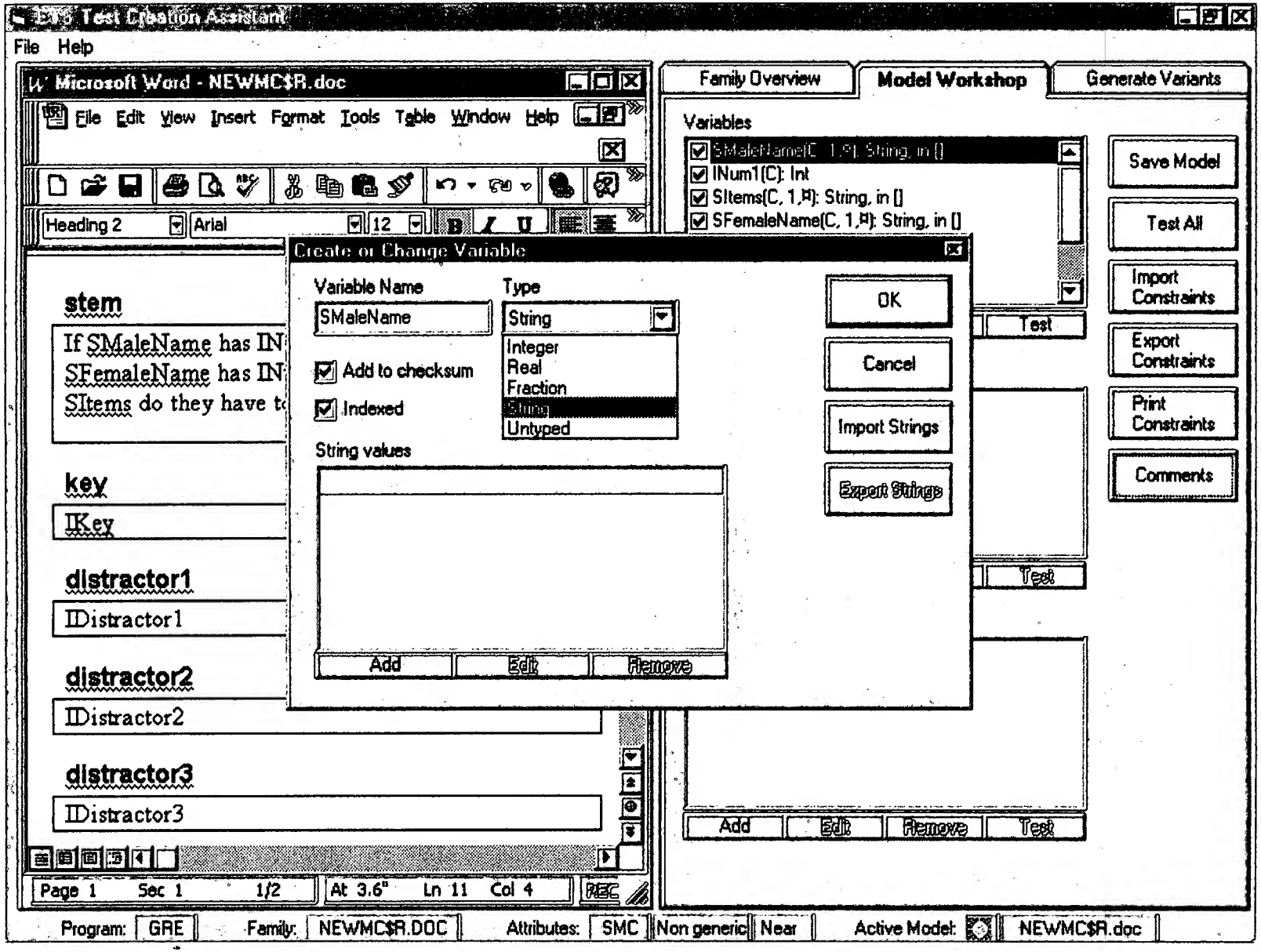

Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,#): String, in []
INum1(C): Int
SItems(C, 1,#): String, in []
SFemaleName(C, 1,#): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
SMaleName
Type
String
Integer
Real
Fraction
String
Untyped
Add to checksum
Indexed
String values
OK
Cancel
Import Strings
Export Strings
Add
Edit
Remove
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 3.6" Ln 11 Col 4
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 15

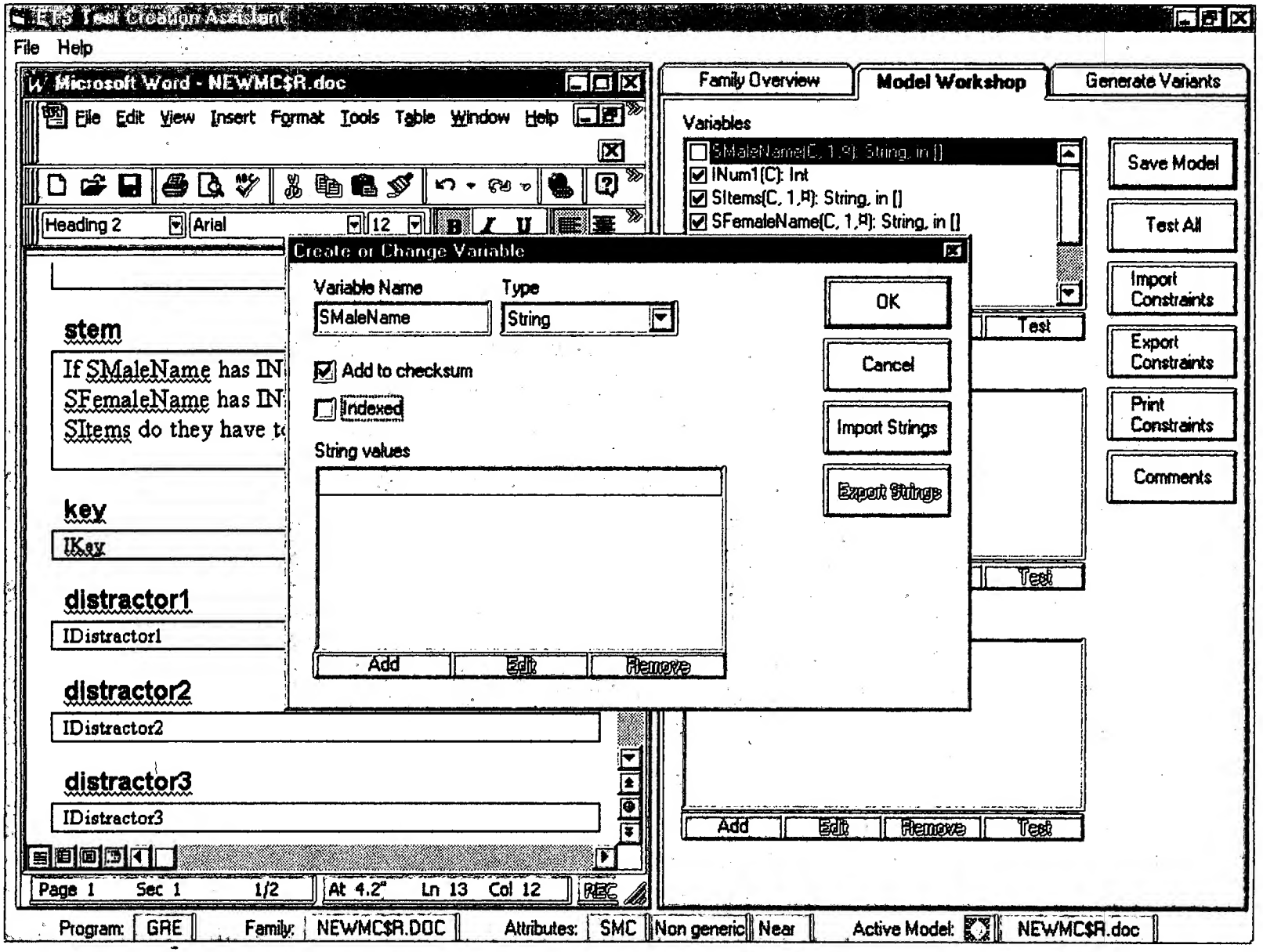

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName[C, 1,R]: String, in []
INum1[C]: Int
SItems[C, 1,R]: String, in []
SFemaleName[C, 1,R]: String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Test
Add
Edit
Remove
Test
Create or Change Variable
Variable Name
SMaleName
Type
String
Add to checksum
Indexed
String values
Add
Edit
Remove
OK
Cancel
Import Strings
Export Strings
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 16

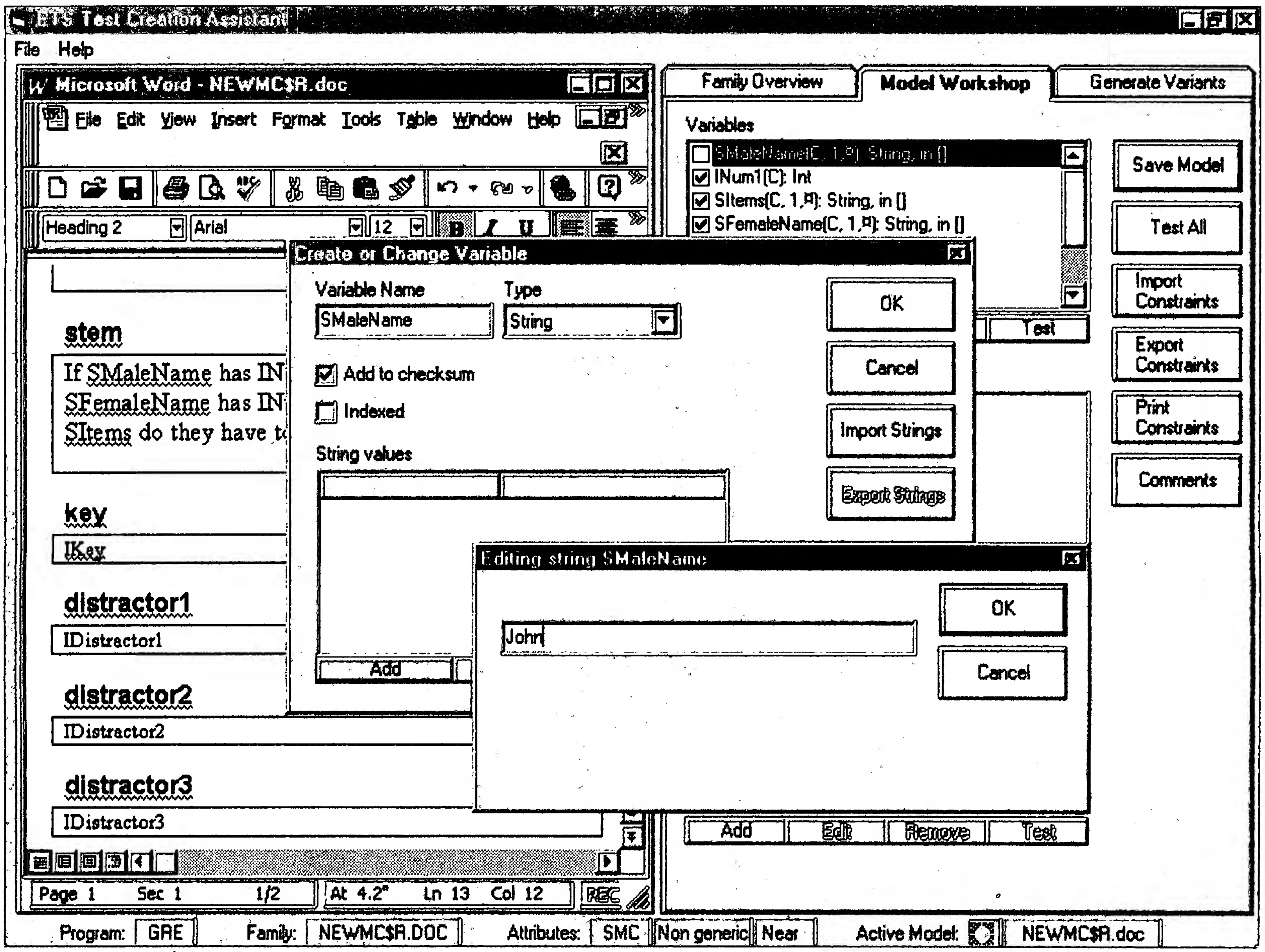

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2 Arial 12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,?): String, in []
INum1(C): Int
SItems(C, 1,?): String, in []
SFemaleName(C, 1,?): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Variable
Variable Name
SMaleName
Type
String
Add to checksum
Indexed
String values
Add
OK
Cancel
Import Strings
Export Strings
Editing string SMaleName
John
OK
Cancel
Test
Add Edit Remove Test
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 17

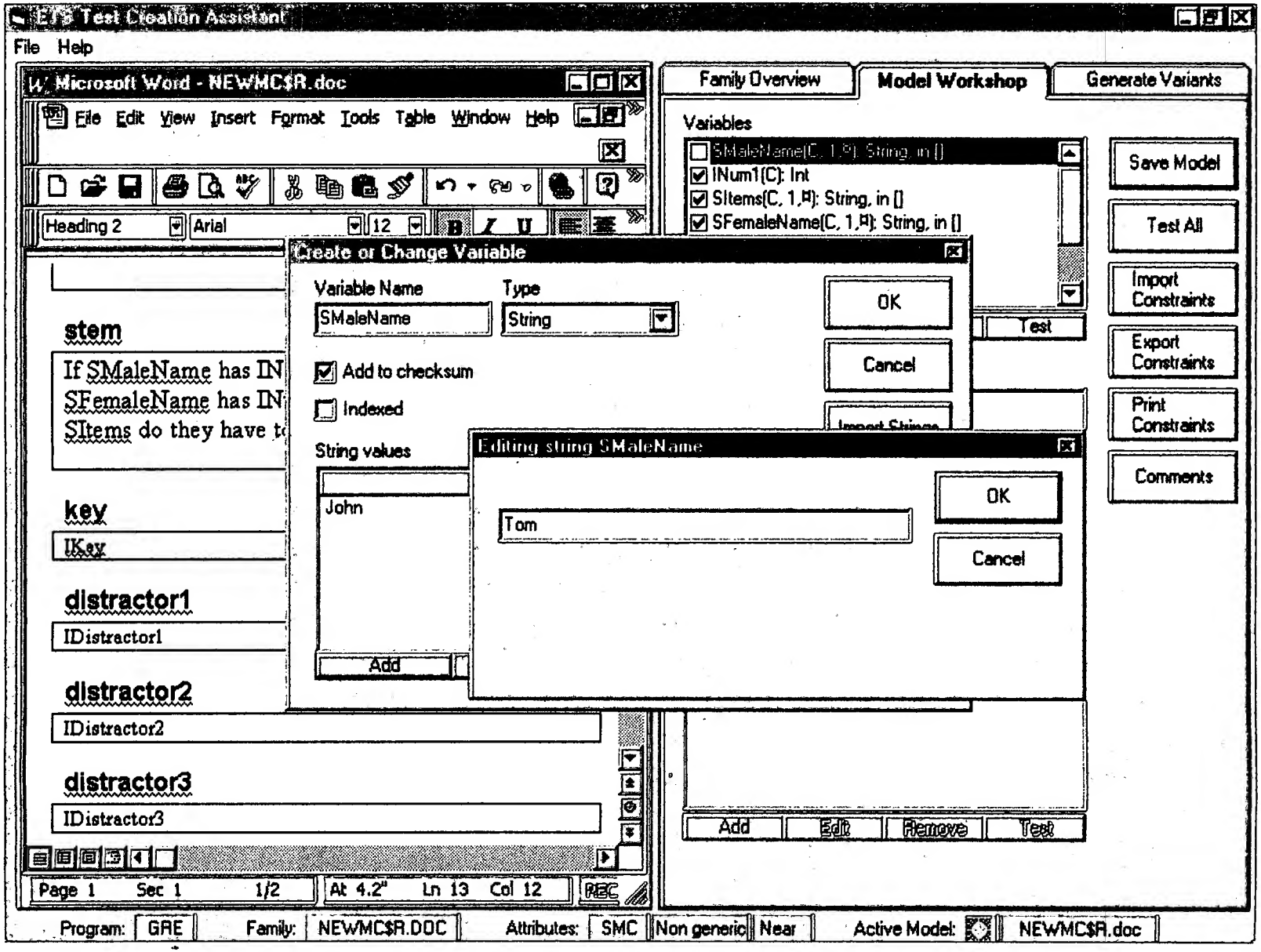

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in []
INum1(C): Int
SItems(C, 1,R): String, in []
SFemaleName(C, 1,R): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
SMaleName
Type
String
OK
Cancel
Add to checksum
Indexed
String values
John
Add
Editing string SMaleName
Tom
OK
Cancel
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 18

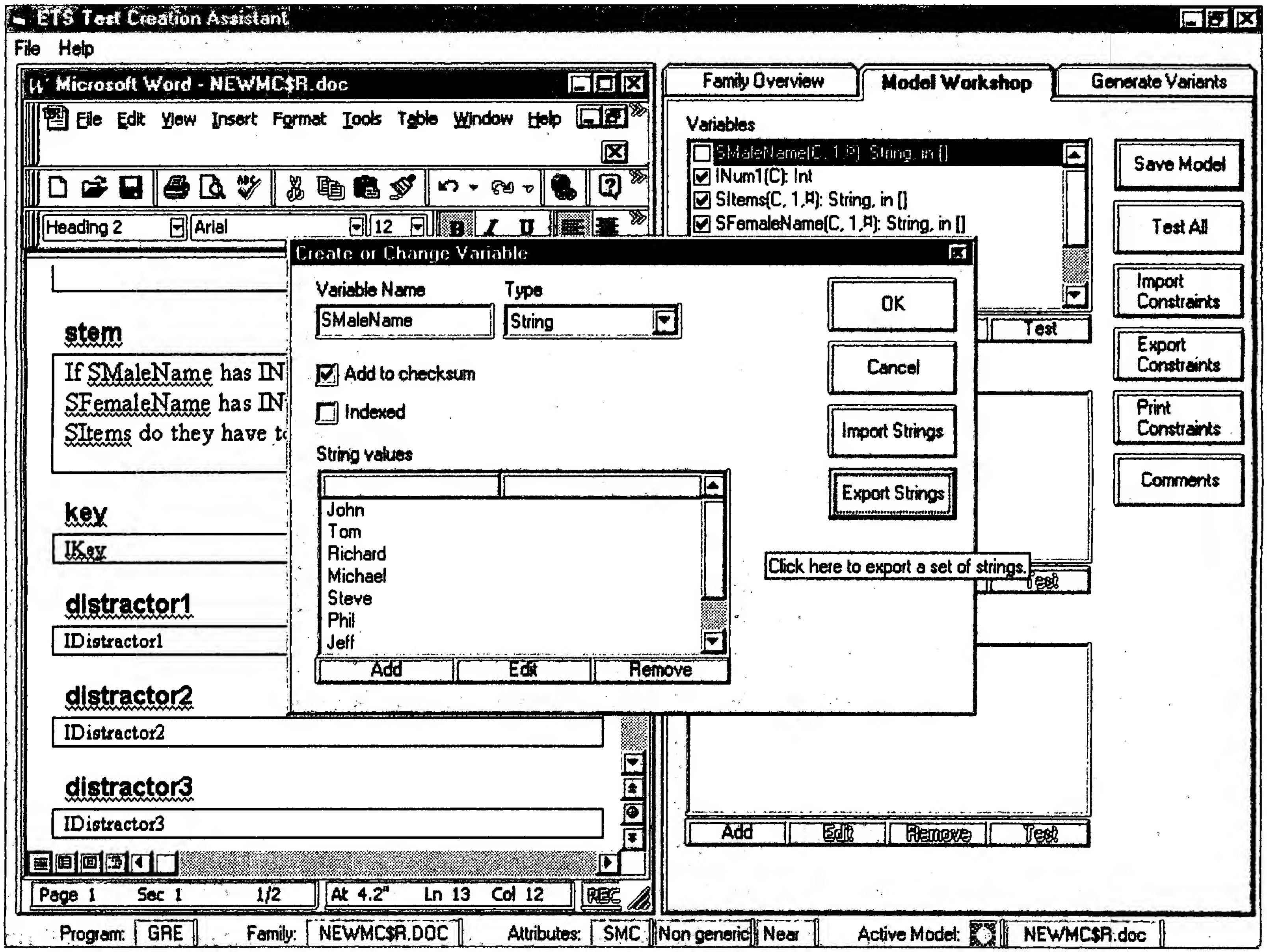

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in []
INum1(C): Int
SItems(C, 1,R): String, in []
SFemaleName(C, 1,R): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Variable
Variable Name
SMaleName
Type
String
Add to checksum
Indexed
String values
John
Tom
Richard
Michael
Steve
Phil
Jeff
Add
Edit
Remove
OK
Cancel
Import Strings
Export Strings
Click here to export a set of strings.
Test
Add
Edit
Remove
Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 19

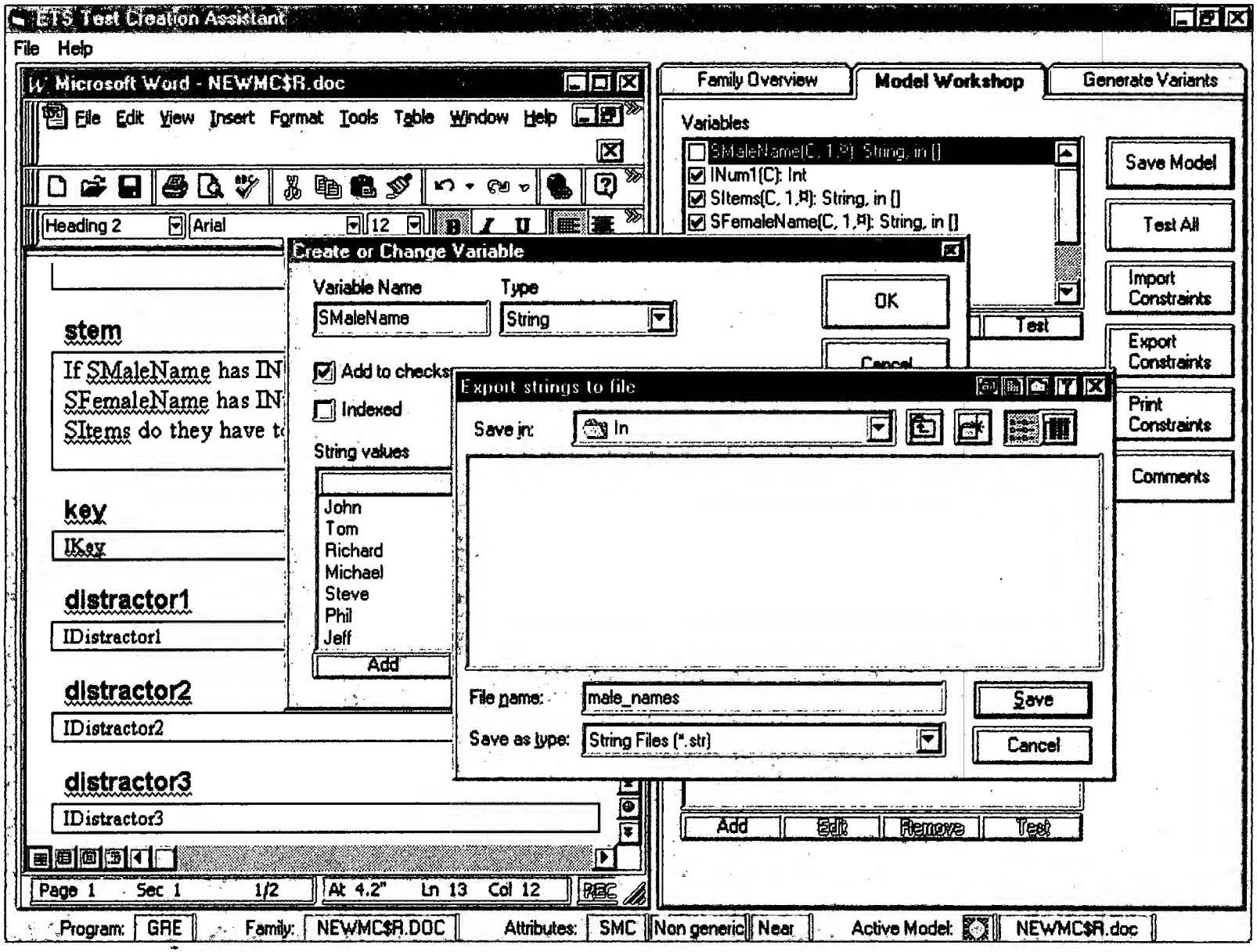

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in []
INum1(C): Int
SItems(C, 1,R): String, in []
SFemaleName(C, 1,R): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
SMaleName
Type
String
OK
Cancel
Add to checks
Indexed
String values
John
Tom
Richard
Michael
Steve
Phil
Jeff
Add
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Export strings to file
Save in:
In
File name:
male_names
Save as type:
String Files (*.str)
Save
Cancel
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 20

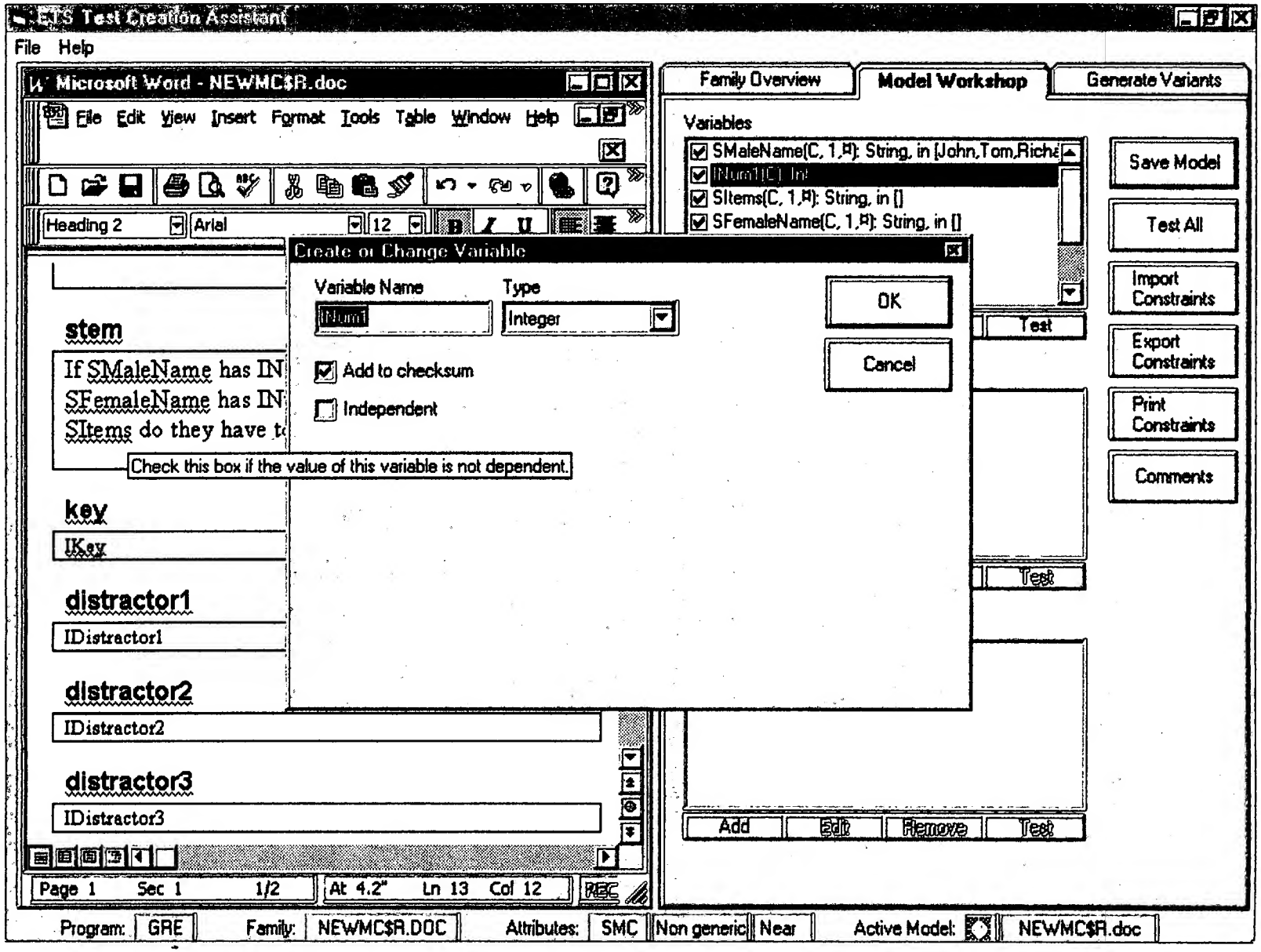

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,#): String, in [John,Tom,Riche
SItems(C, 1,#): String, in []
SFemaleName(C, 1,#): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
Num1
Type
Integer
OK
Cancel
Add to checksum
Independent
Check this box if the value of this variable is not dependent.
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 21

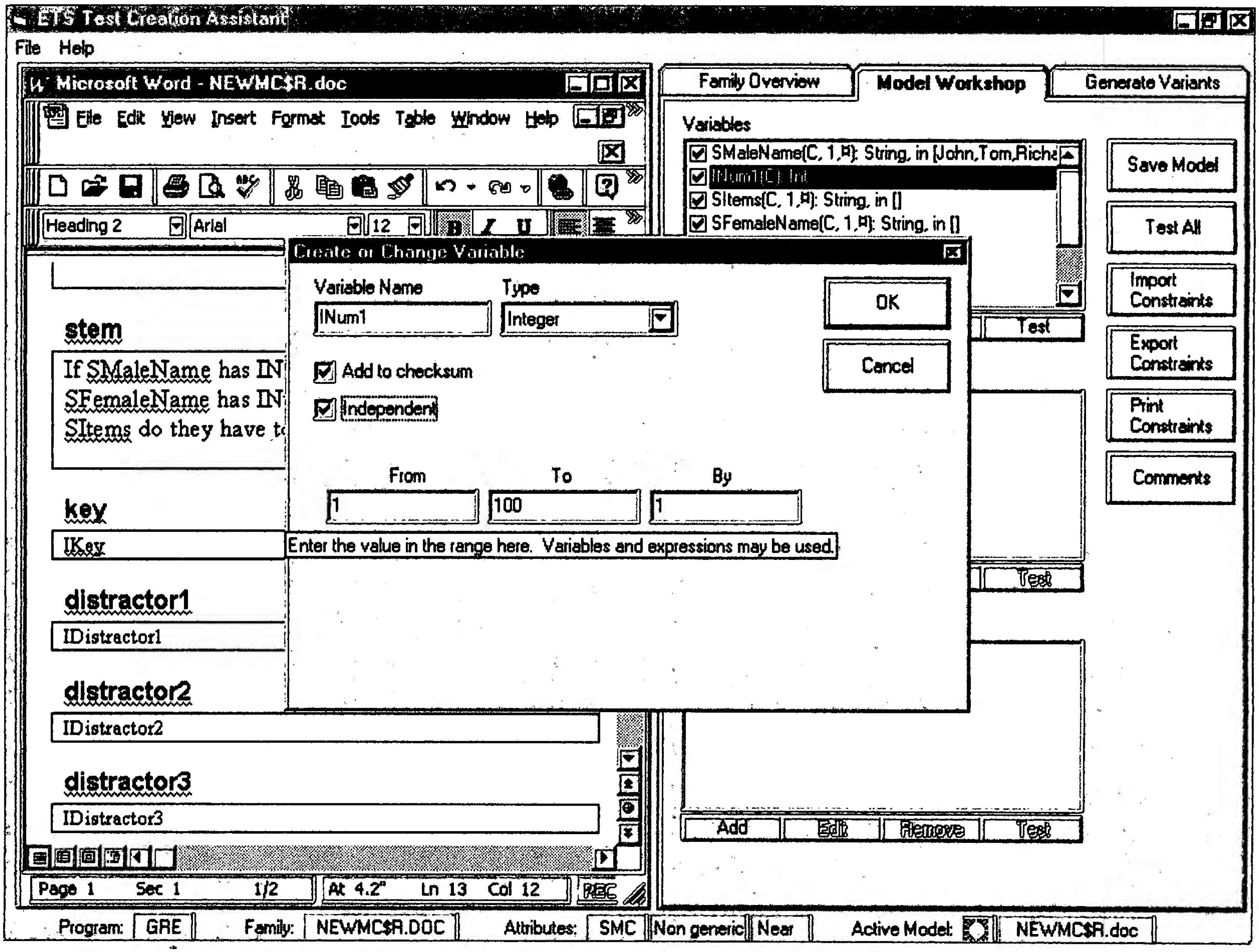

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in [John,Tom,Richa
INum1(C): Int
SItems(C, 1,R): String, in []
SFemaleName(C, 1,R): String, in []
Test
Test
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Variable
Variable Name
INum1
Type
Integer
OK
Cancel
Add to checksum
Independent
From
To
By
1
100
1
Enter the value in the range here. Variables and expressions may be used.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 22

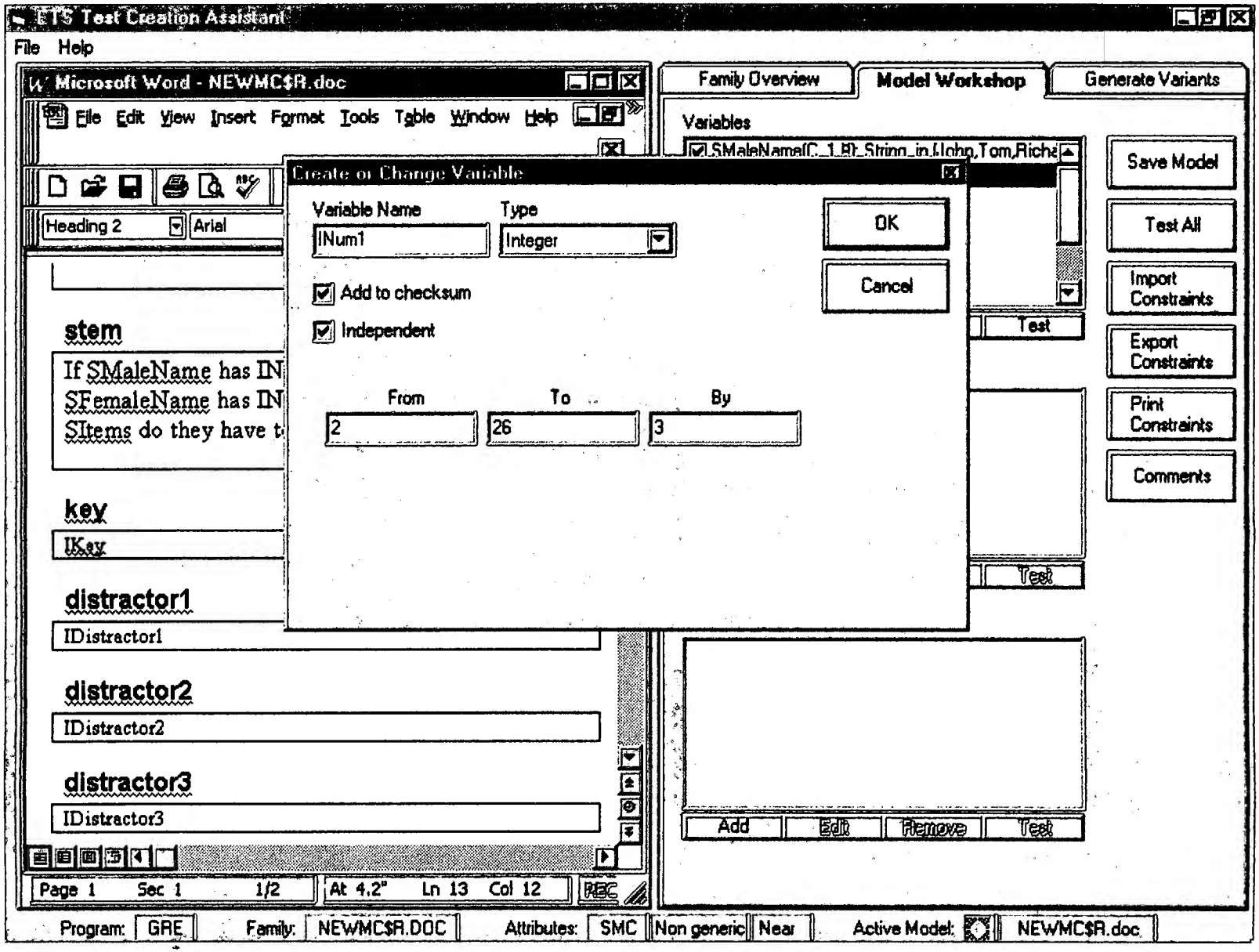

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Create or Change Variable
Variable Name
INum1
Type
Integer
Add to checksum
Independent
From
2
To
26
By
3
OK
Cancel
Family Overview
Model Workshop
Generate Variants
Variables
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Add
Edit
Remove
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 23

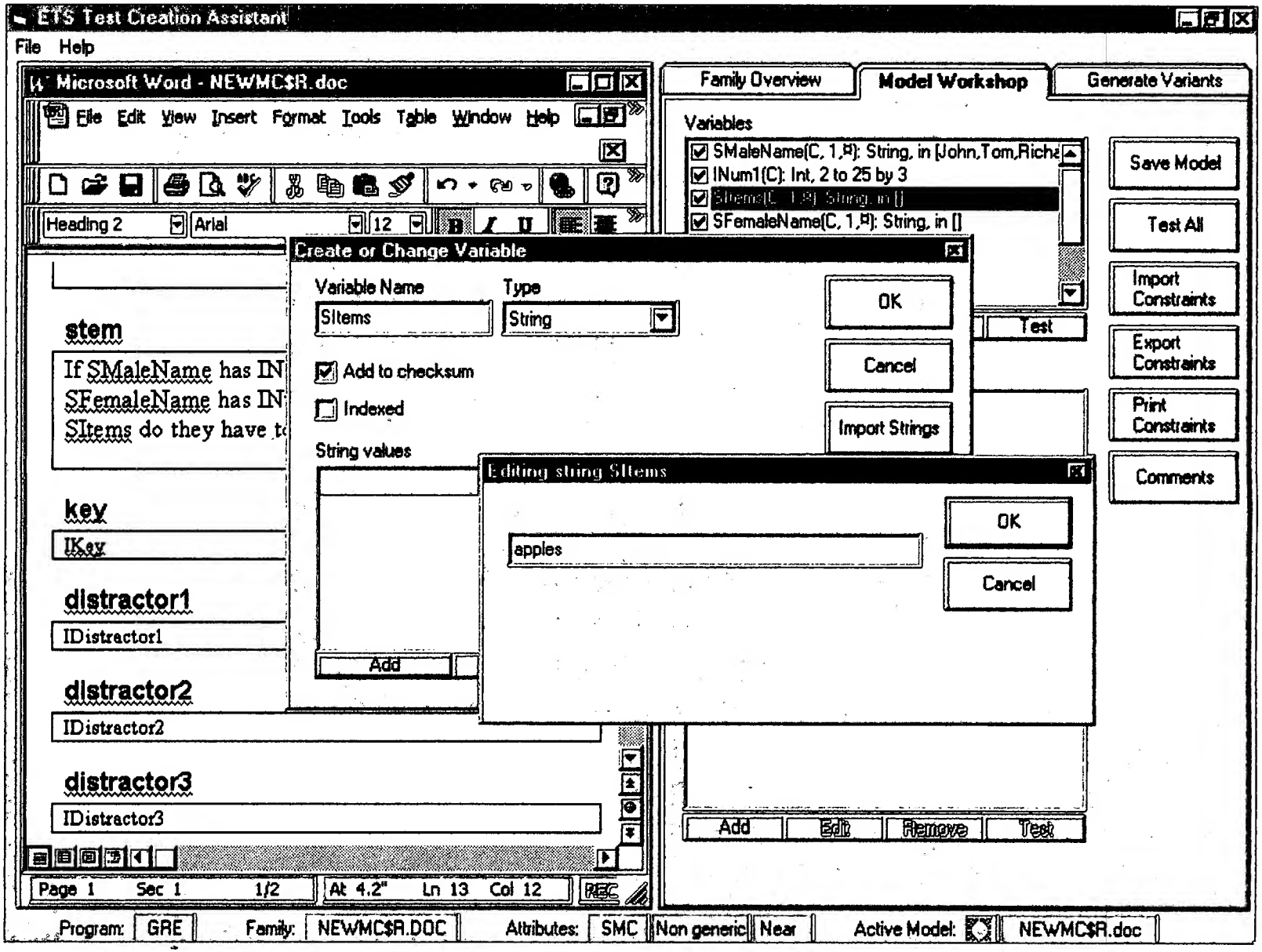

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in [John,Tom,Riche
INum1(C): Int, 2 to 25 by 3
SFemaleName(C, 1,R): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
SItems
Type
String
OK
Cancel
Import Strings
Add to checksum
Indexed
String values
Add
Editing string SItems
apples
OK
Cancel
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 24

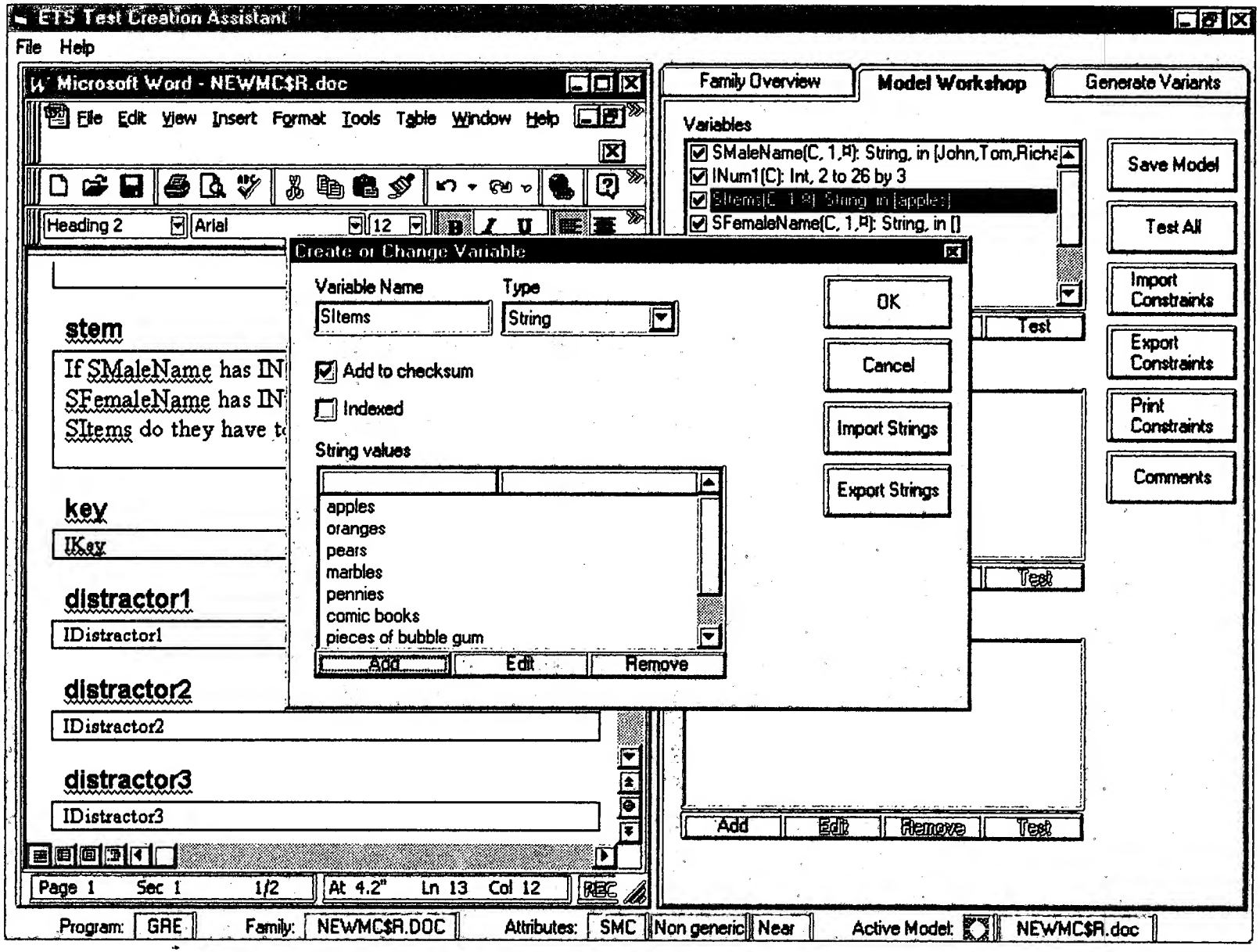

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in [John,Tom,Richa
INum1(C): Int, 2 to 26 by 3
SItems(C, 1,R): String, in [apples]
SFemaleName(C, 1,R): String, in []
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Test
Add
Edit
Remove
Test
Create or Change Variable
Variable Name
SItems
Type
String
Add to checksum
Indexed
String values
apples
oranges
pears
marbles
pennies
comic books
pieces of bubble gum
Add
Edit
Remove
OK
Cancel
Import Strings
Export Strings
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 25

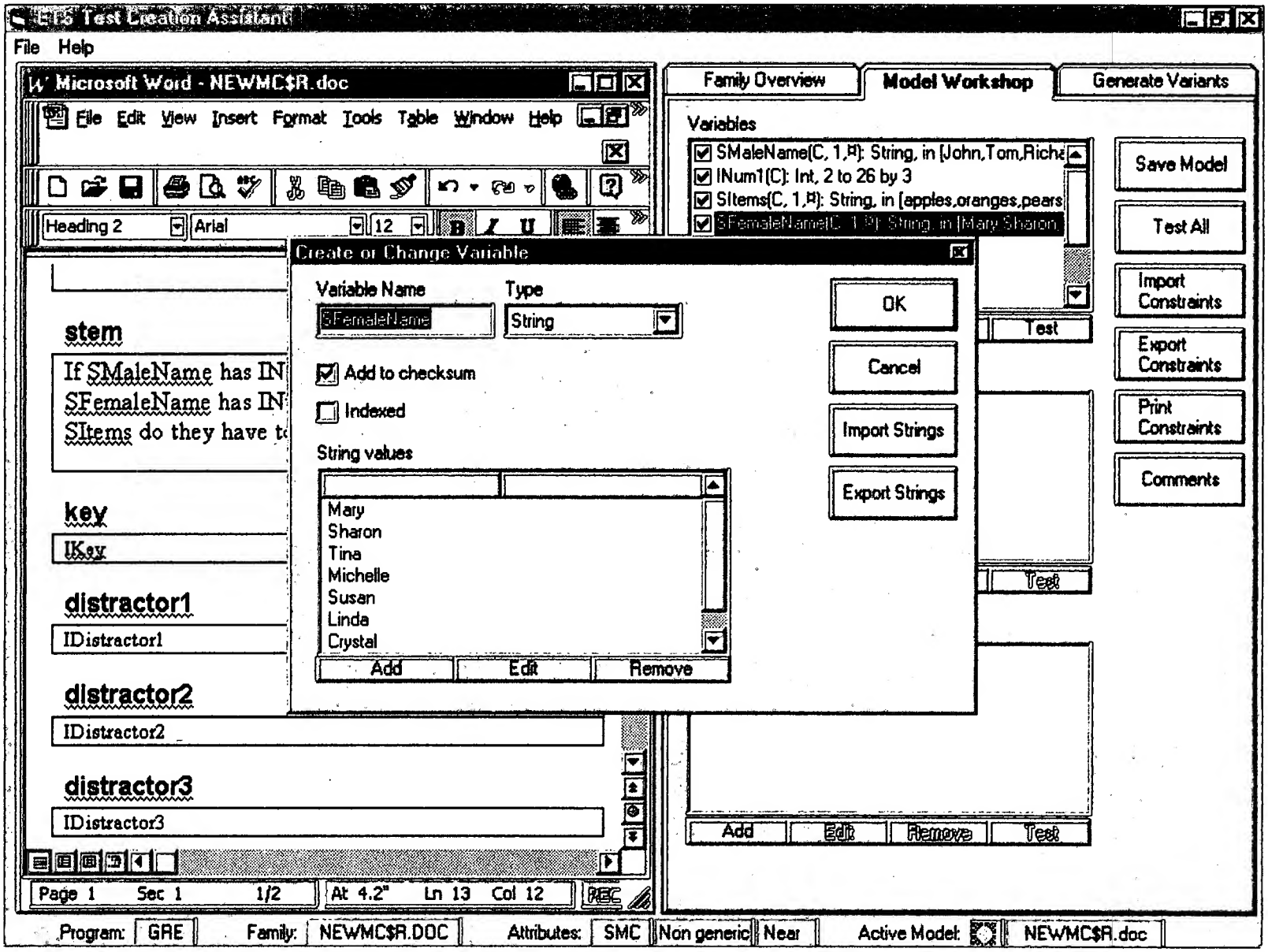

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,#): String, in [John,Tom,Richa
INum1(C): Int, 2 to 26 by 3
SItems(C, 1,#): String, in [apples,oranges,pears
SFemaleName(C, 1,#): String, in [Mary,Sharon
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
SFemaleName
Type
String
OK
Cancel
Import Strings
Export Strings
Add to checksum
Indexed
String values
Mary
Sharon
Tina
Michelle
Susan
Linda
Crystal
Add
Edit
Remove
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 26

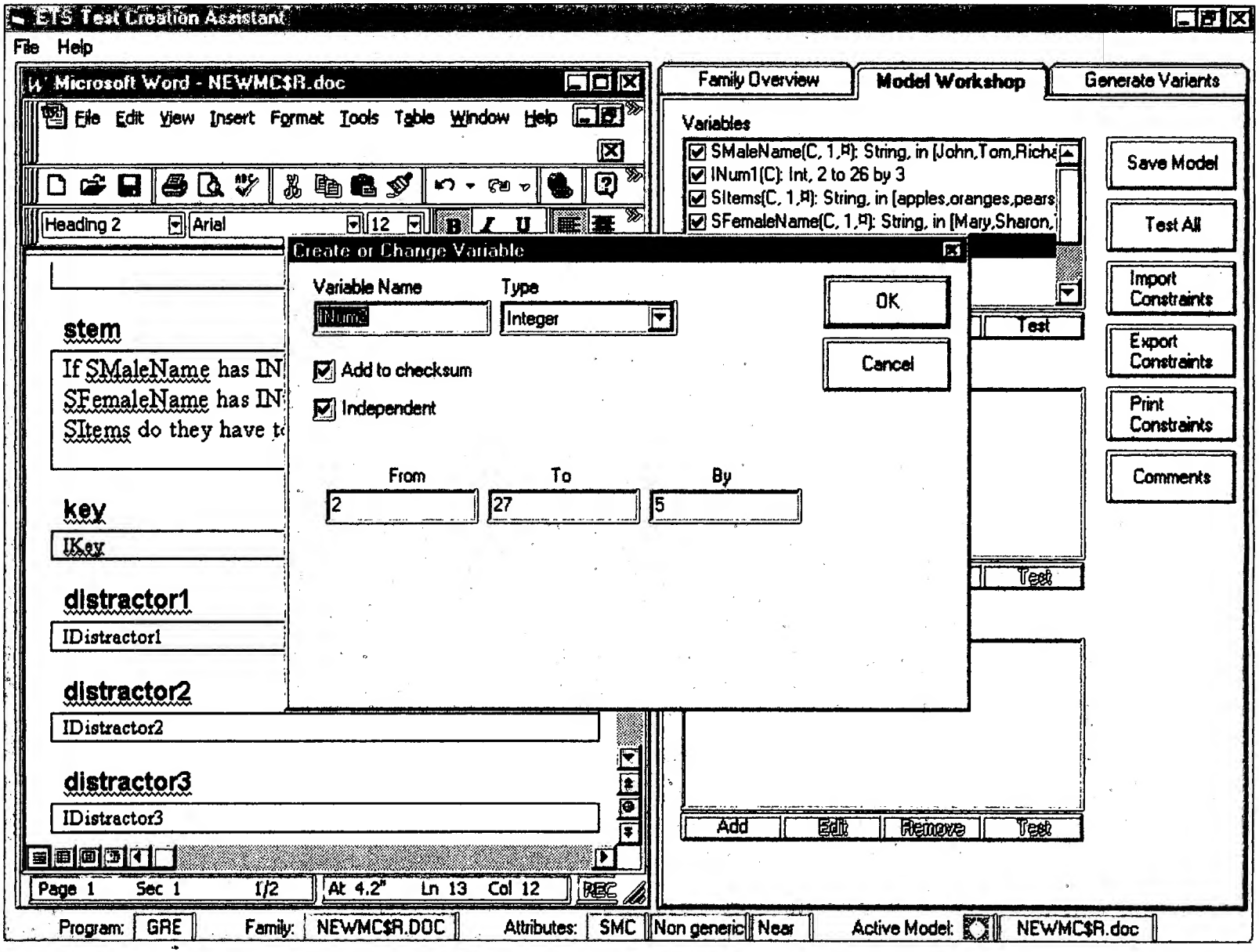

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,R): String, in [John,Tom,Richa
INum1(C): Int, 2 to 26 by 3
SItems(C, 1,R): String, in [apples,oranges,pears
SFemaleName(C, 1,R): String, in [Mary,Sharon,
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Create or Change Variable
Variable Name
Name
Type
Integer
OK
Cancel
Add to checksum
Independent
From
To
By
2
27
5
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Add
Edit
Remove
Test
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 27

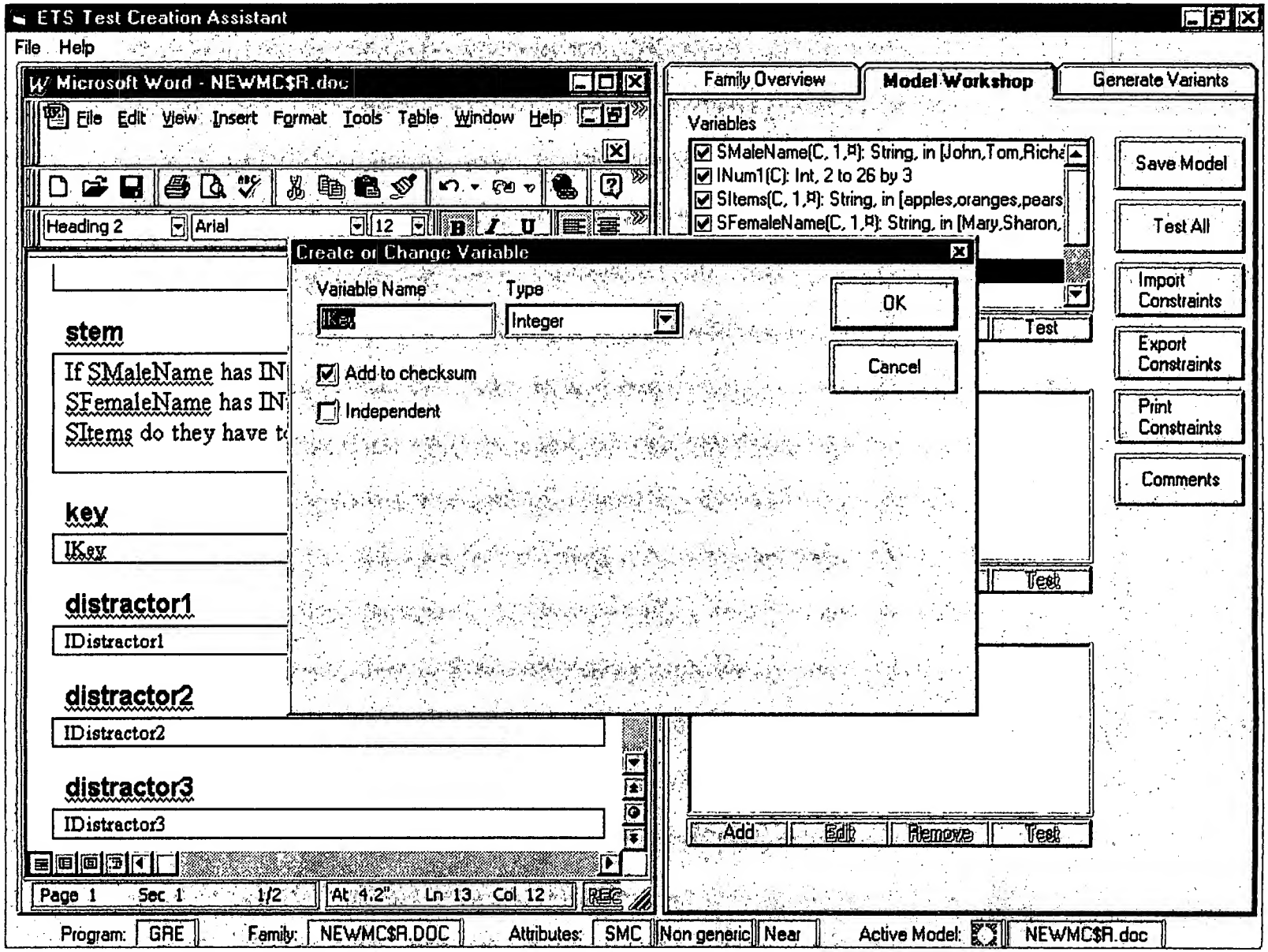


FIG. 28

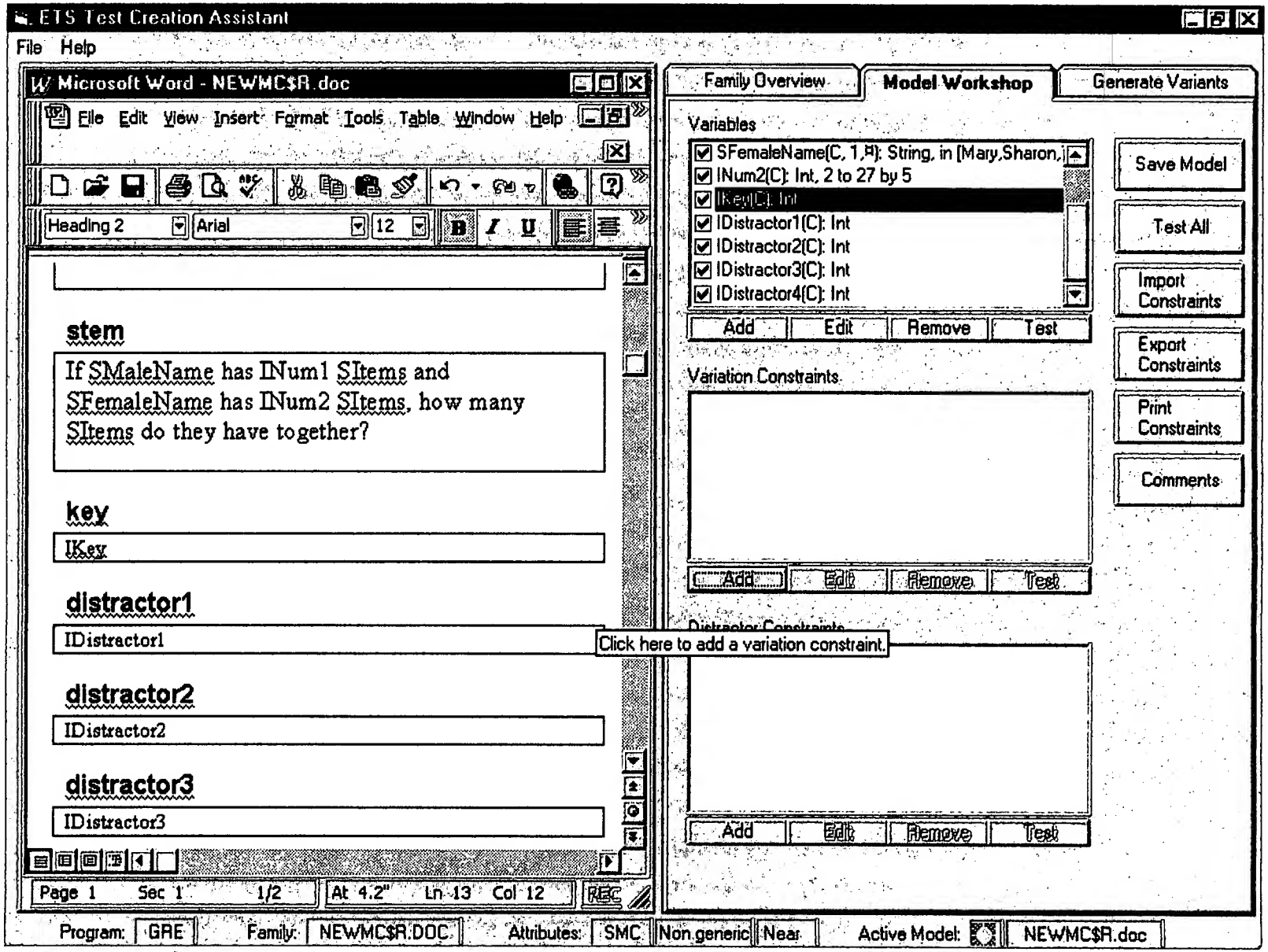

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,4): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Click here to add a variation constraint.
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non.generic Near
Active Model: NEWMC$R.doc

FIG. 29

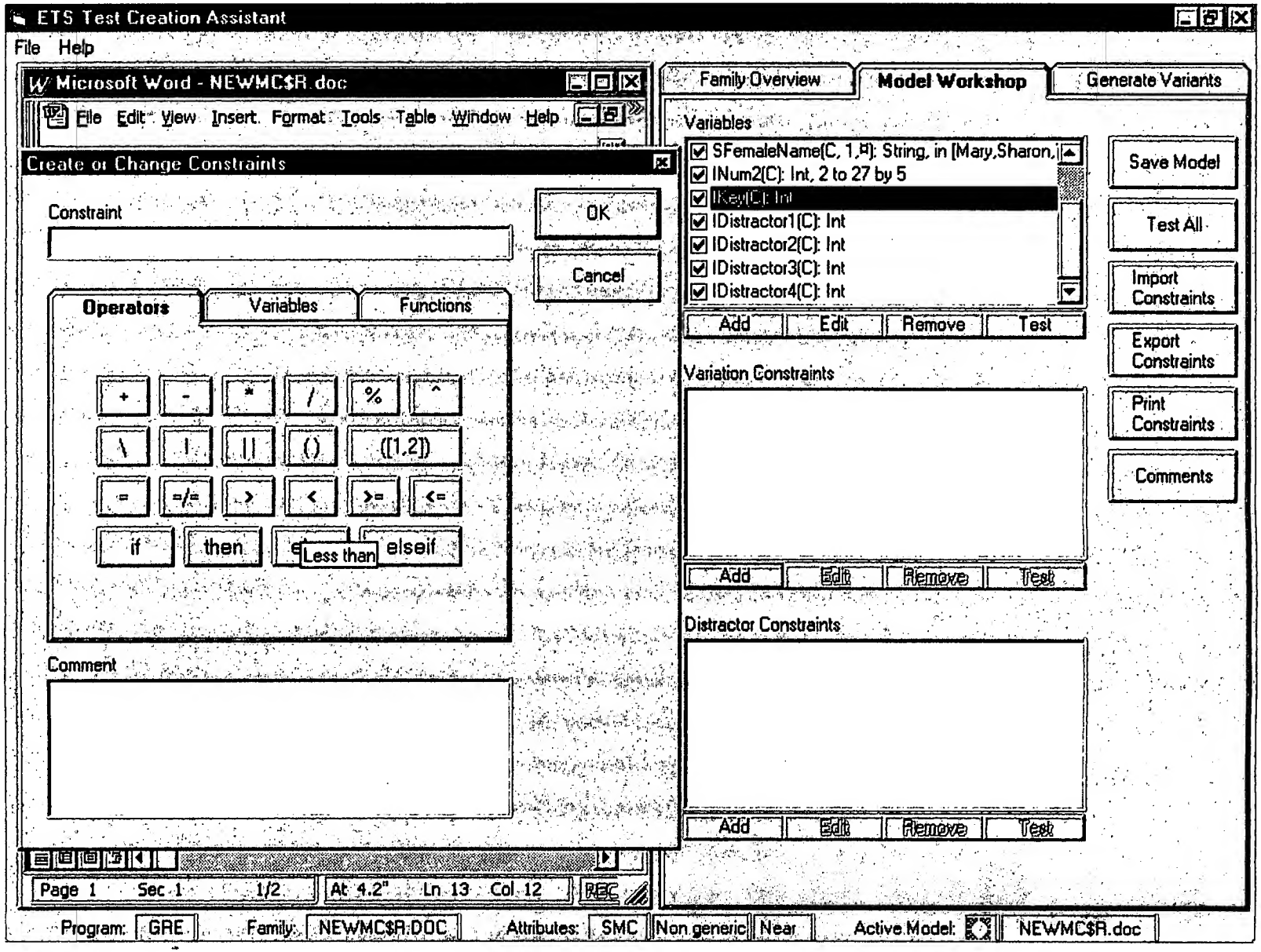

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
+ - * / % ^
\ | || () ([1,2])
= =/= > < >= <=
if then else elseif
Less than
Comment
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,5): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 30

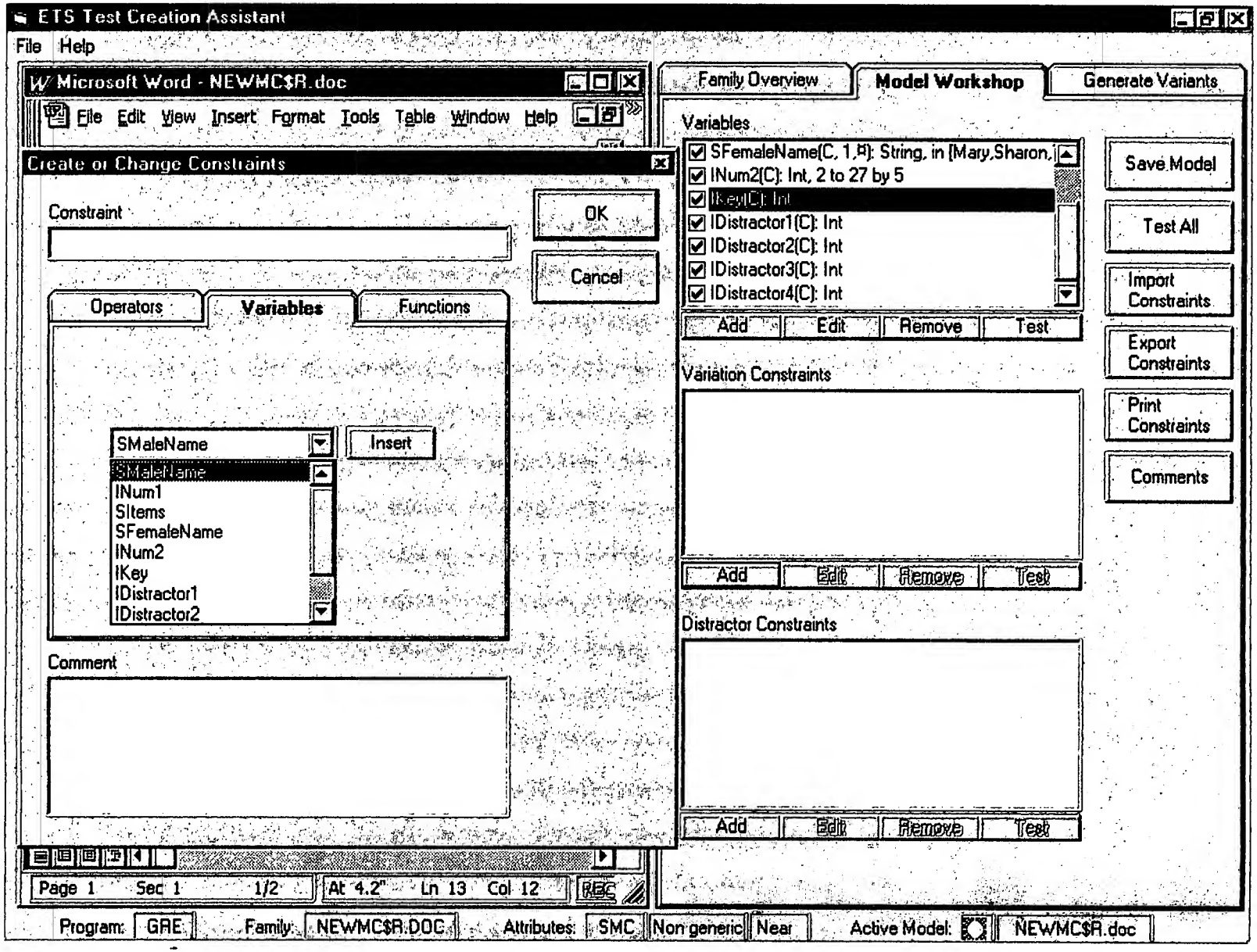

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
SMaleName
Insert
SMaleName
INum1
SItems
SFemaleName
INum2
IKey
IDistractor1
IDistractor2
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,[]): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 31

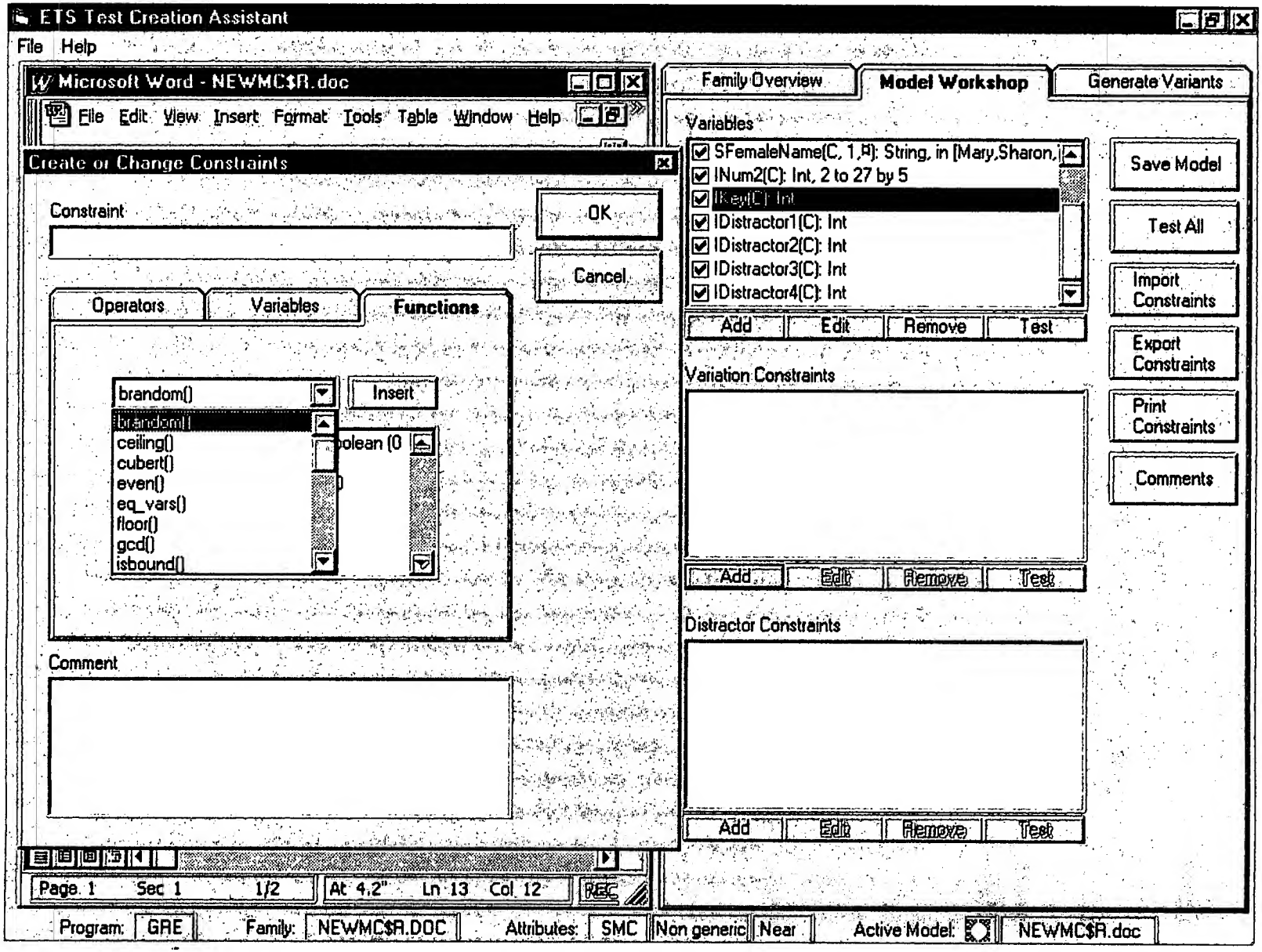

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
brandom()
Insert
brandom()
ceiling()
cubert()
even()
eq_vars()
floor()
gcd()
isbound()
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,5): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 32

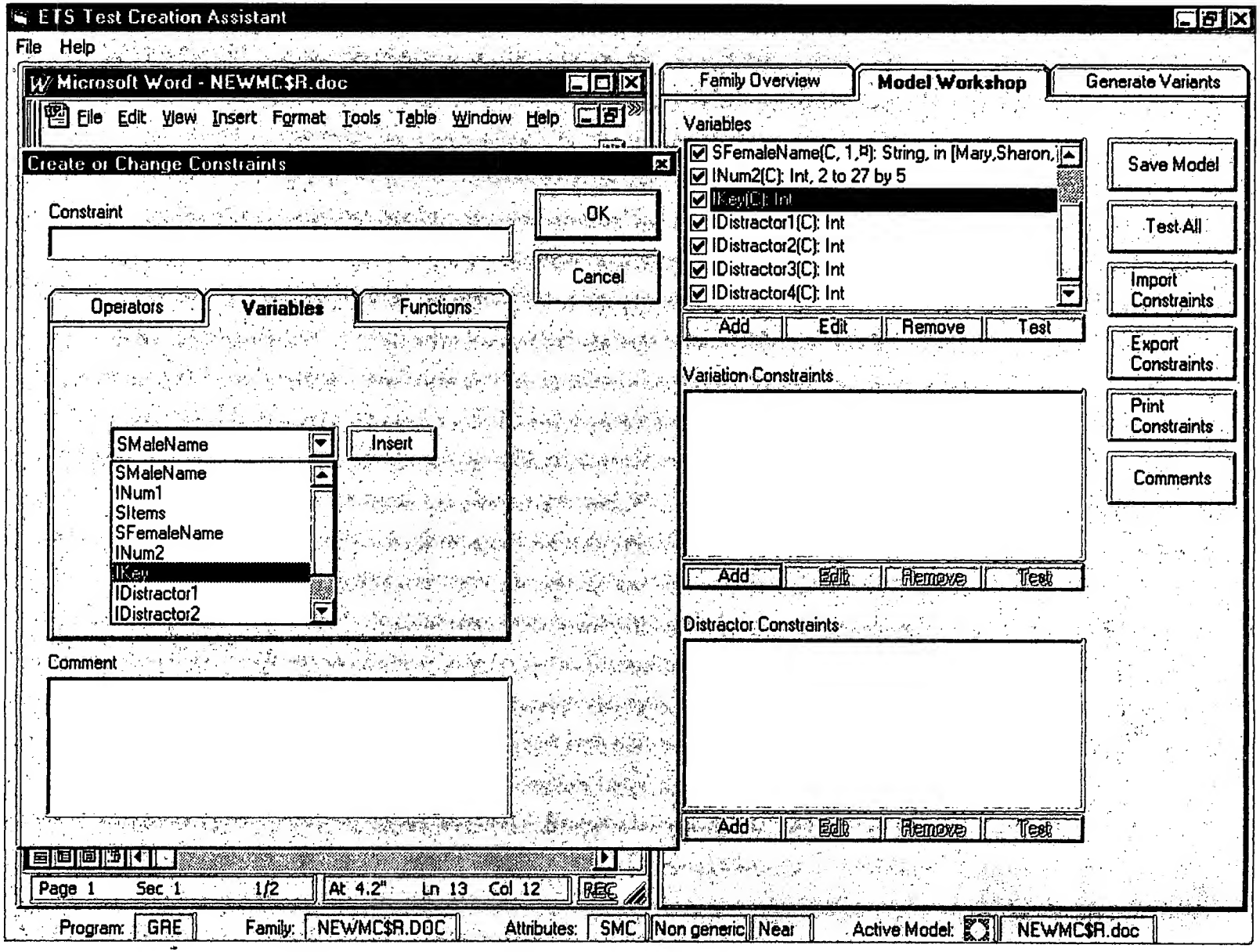

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
SMaleName
Insert
SMaleName
INum1
SItems
SFemaleName
INum2
IKey
IDistractor1
IDistractor2
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,8): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model:
NEWMC$R.doc

FIG. 33

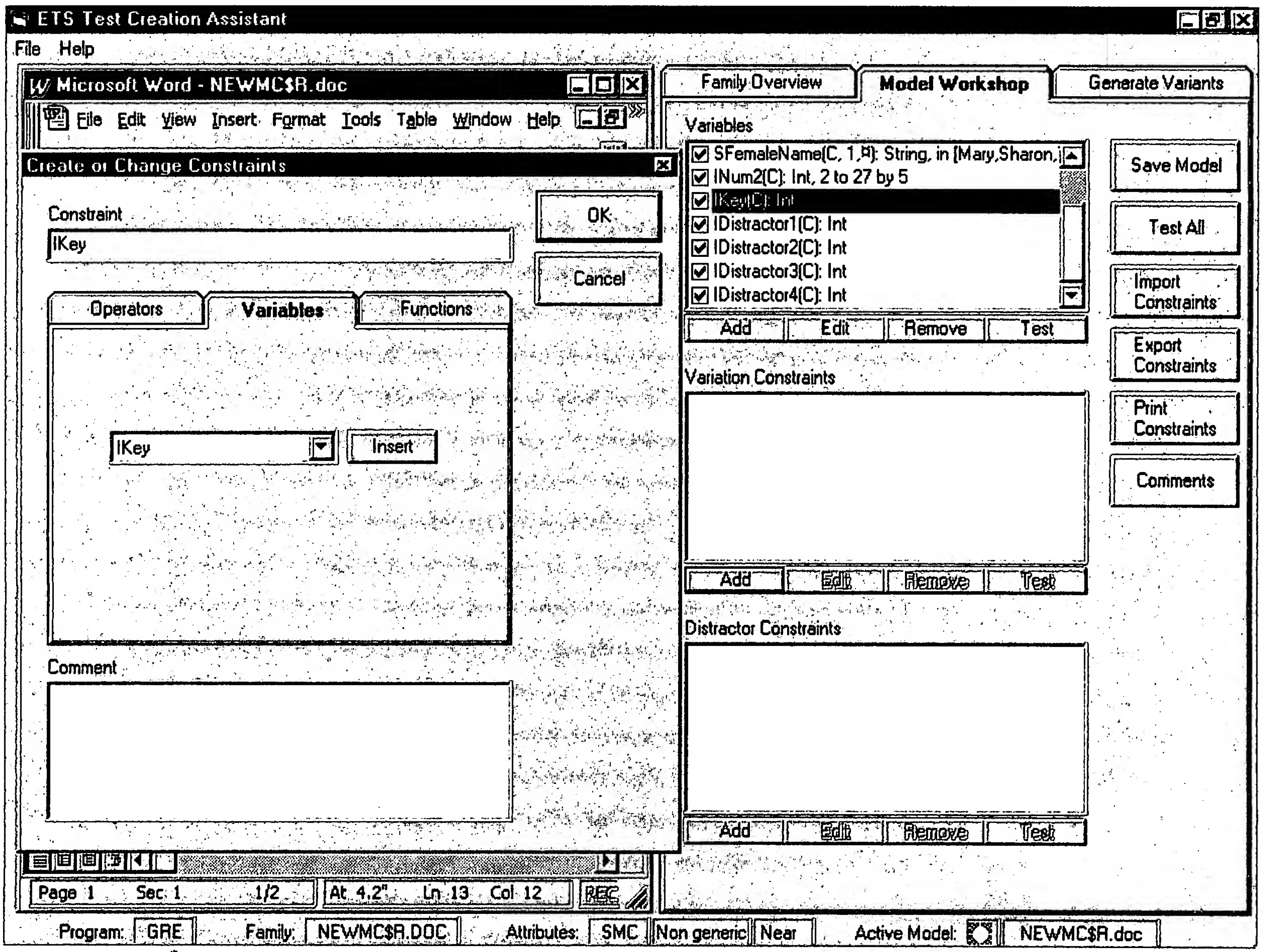

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
IKey
OK
Cancel
Operators
Variables
Functions
IKey
Insert
Comment
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 34

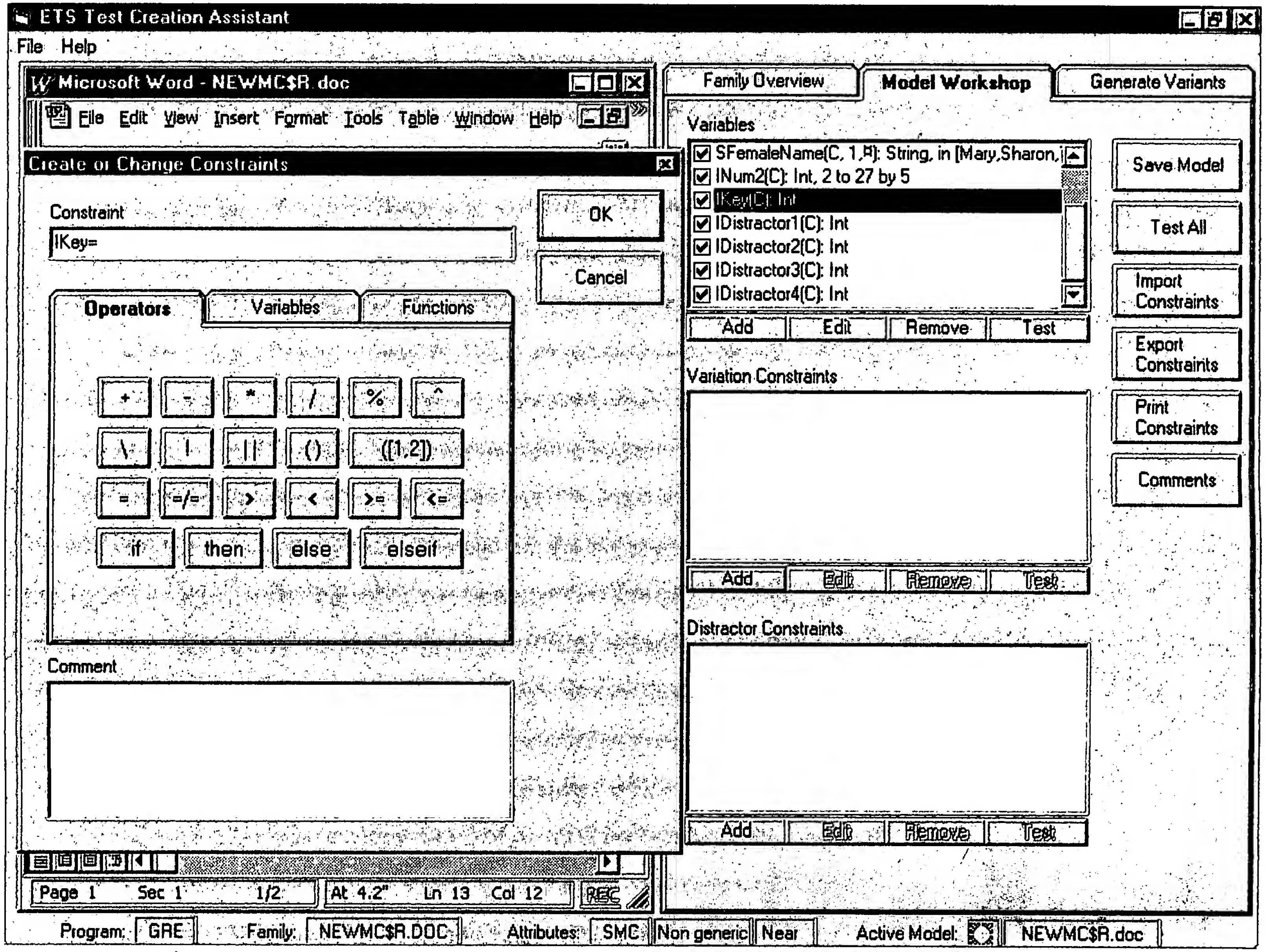

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
IKey=
OK
Cancel
Operators
Variables
Functions
+ - * / % ^
\ | || () ([1,2])
= =/= > < >= <=
if then else elseif
Comment
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 35

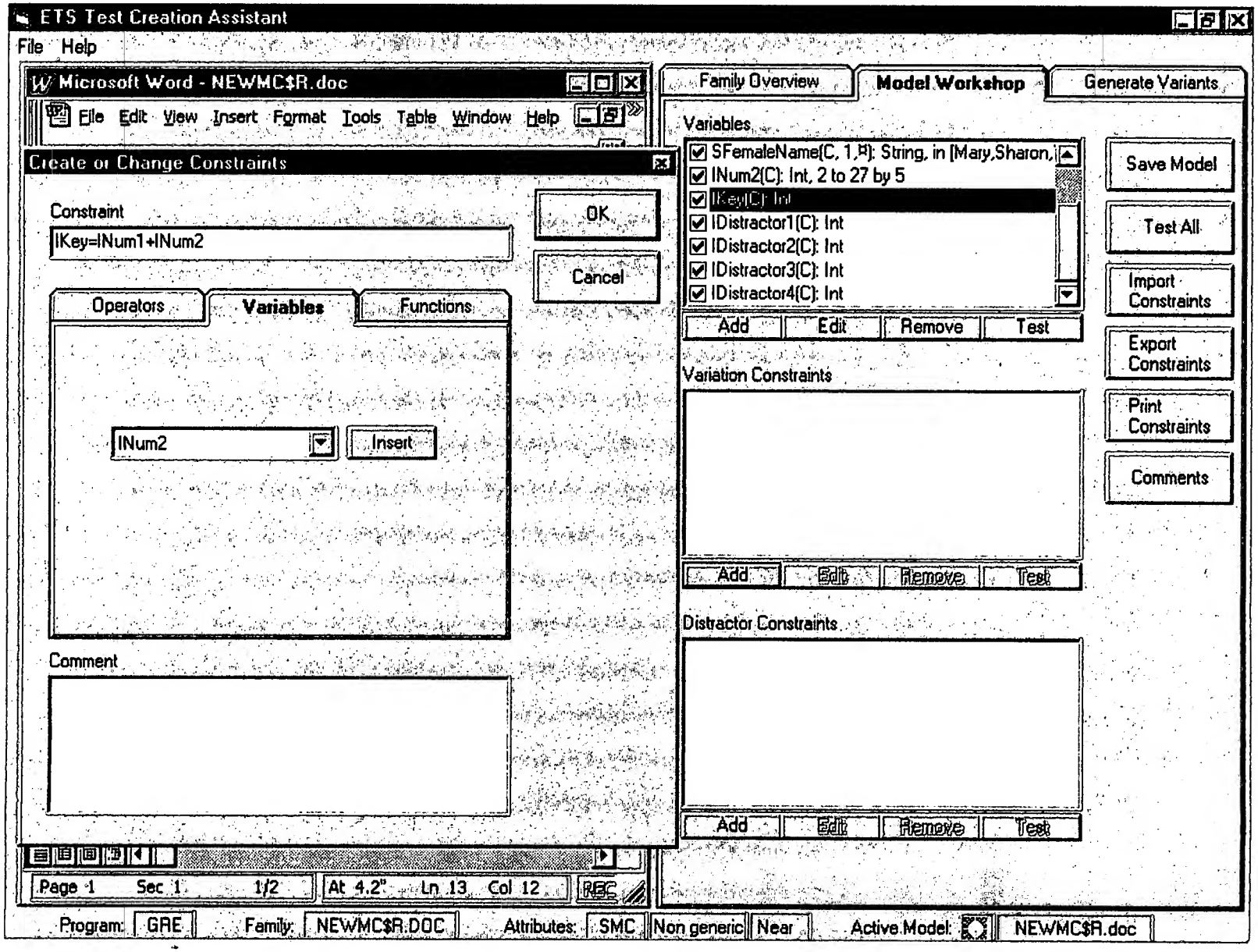

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
IKey=INum1+INum2
OK
Cancel
Operators
Variables
Functions
INum2
Insert
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,[]): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 36

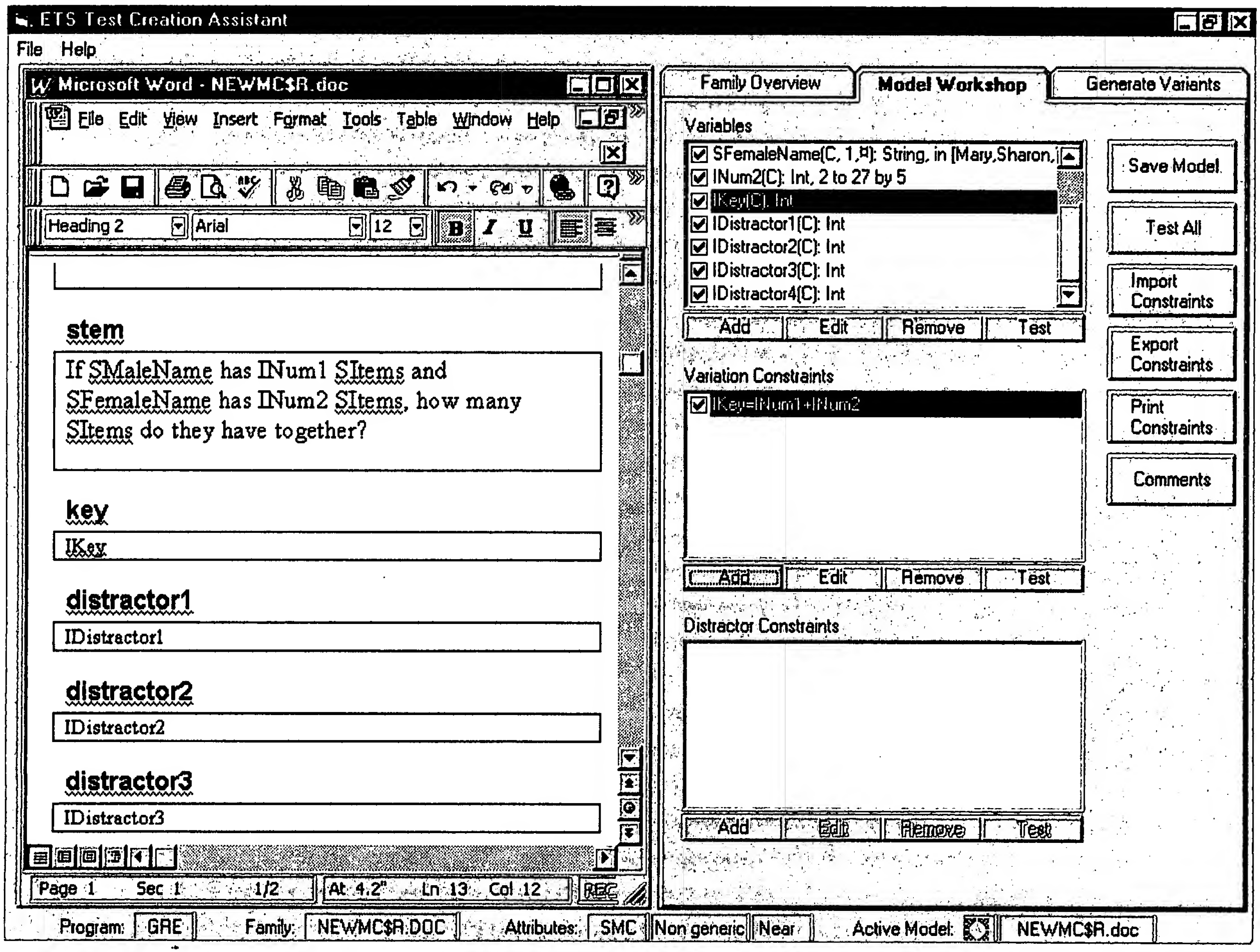

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,H): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
IKey=INum1+INum2
Distractor Constraints
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 37

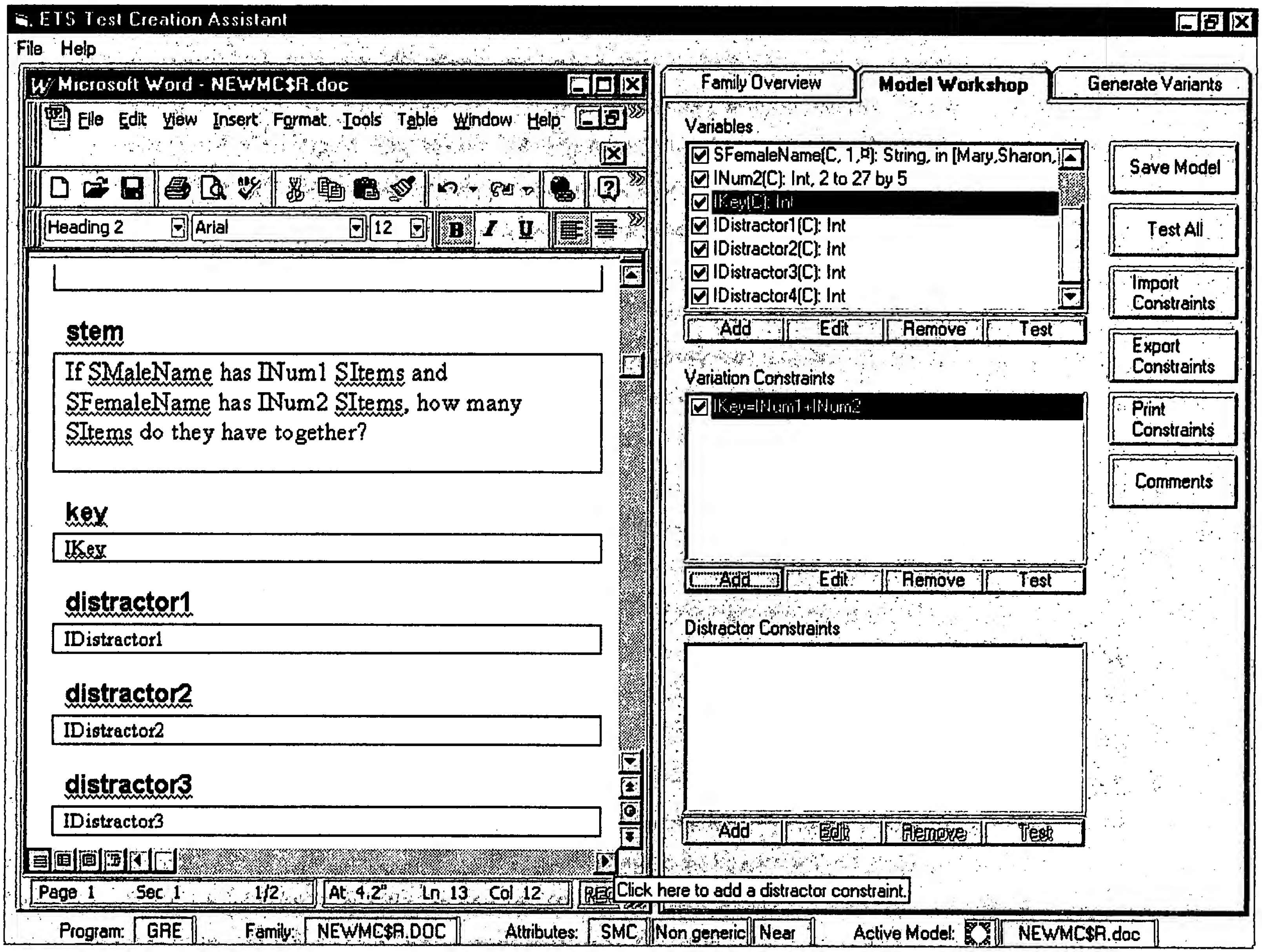

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,: String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
IKey=INum1+INum2
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Click here to add a distractor constraint.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 38

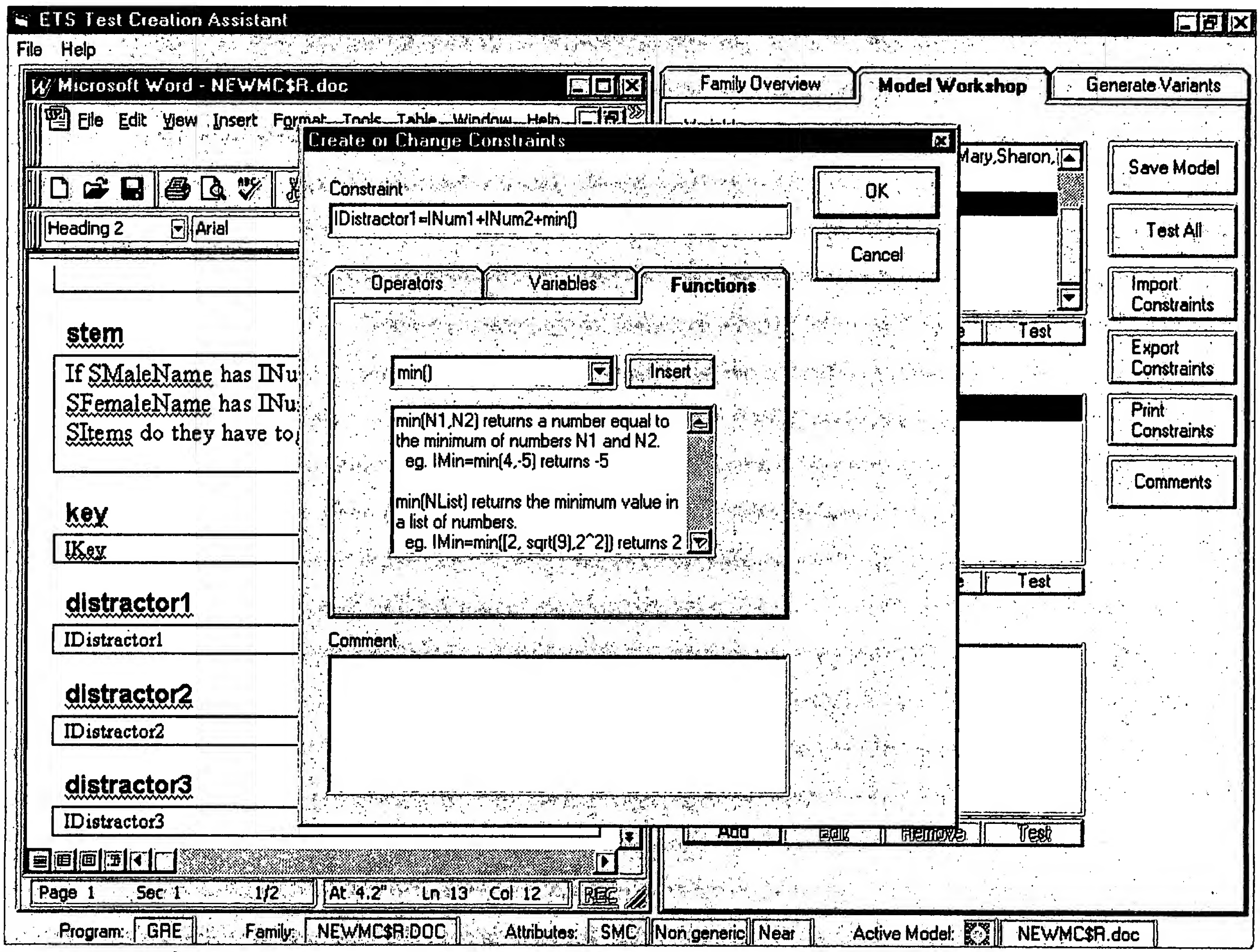

ETS Test Creation Assistant
File
Help
Microsoft Word - NEWMC$R.doc
File
Edit
View
Insert
Heading 2
Arial
stem
If SMaleName has INu
SFemaleName has INu
SItems do they have to
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1
Sec 1
1/2
At 4.2"
Ln 13
Col 12
REC
Family Overview
Model Workshop
Generate Variants
Create or Change Constraints
Constraint
IDistractor1=INum1+INum2+min()
OK
Cancel
Operators
Variables
Functions
min()
Insert
min(N1,N2) returns a number equal to the minimum of numbers N1 and N2.
eg. IMin=min(4,-5) returns -5
min(NList) returns the minimum value in a list of numbers.
eg. IMin=min([2, sqrt(9),2^2]) returns 2
Comment
Mary,Sharon,
Test
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program:
GRE
Family:
NEWMC$R.DOC
Attributes:
SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 39

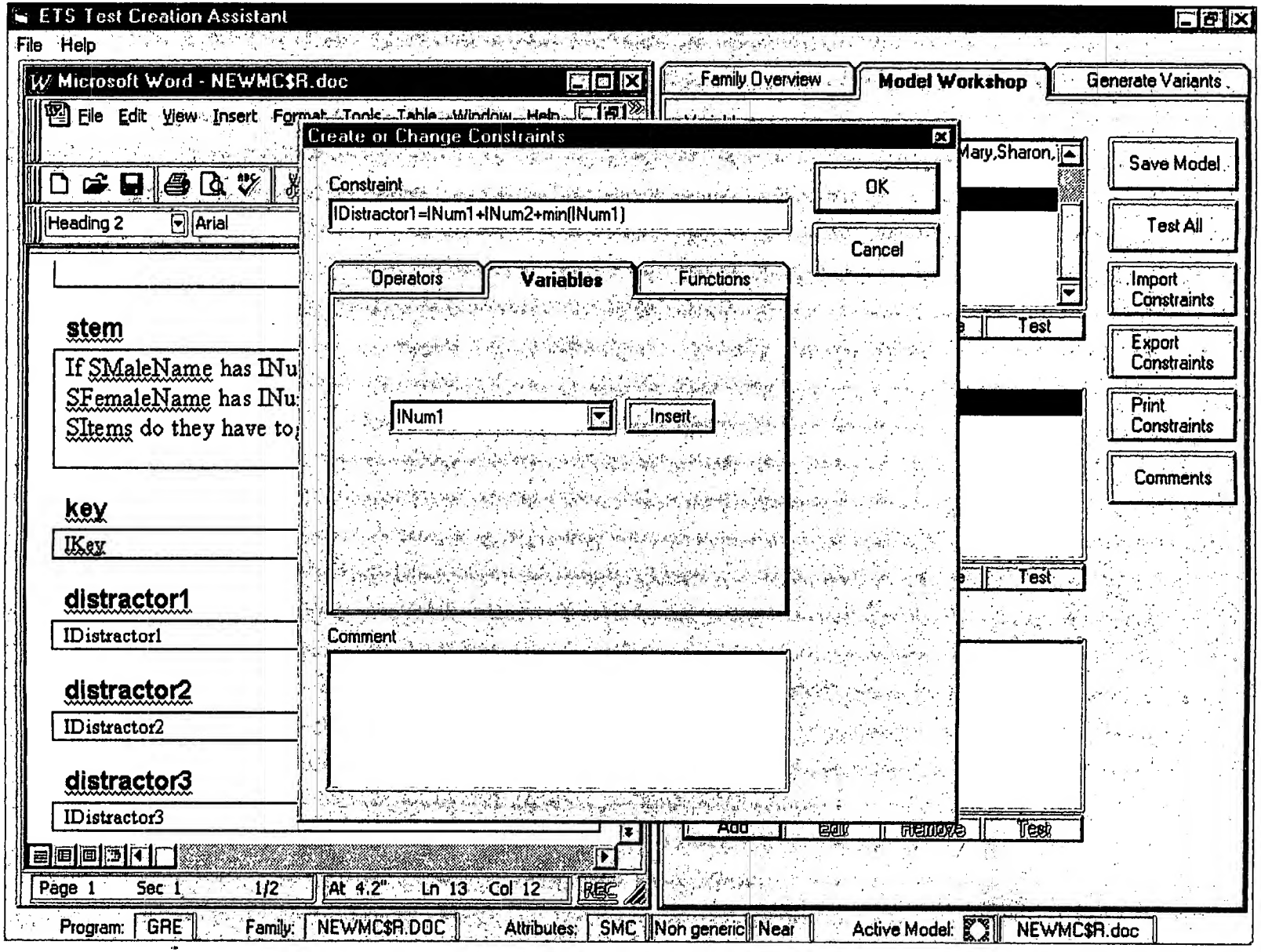

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
stem
If SMaleName has INu
SFemaleName has INu
SItems do they have to
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Create or Change Constraints
Constraint
IDistractor1=INum1+INum2+min(INum1)
OK
Cancel
Operators
Variables
Functions
INum1
Insert
Comment
Family Overview
Model Workshop
Generate Variants
Mary,Sharon,
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Add
Edit
Remove
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 40

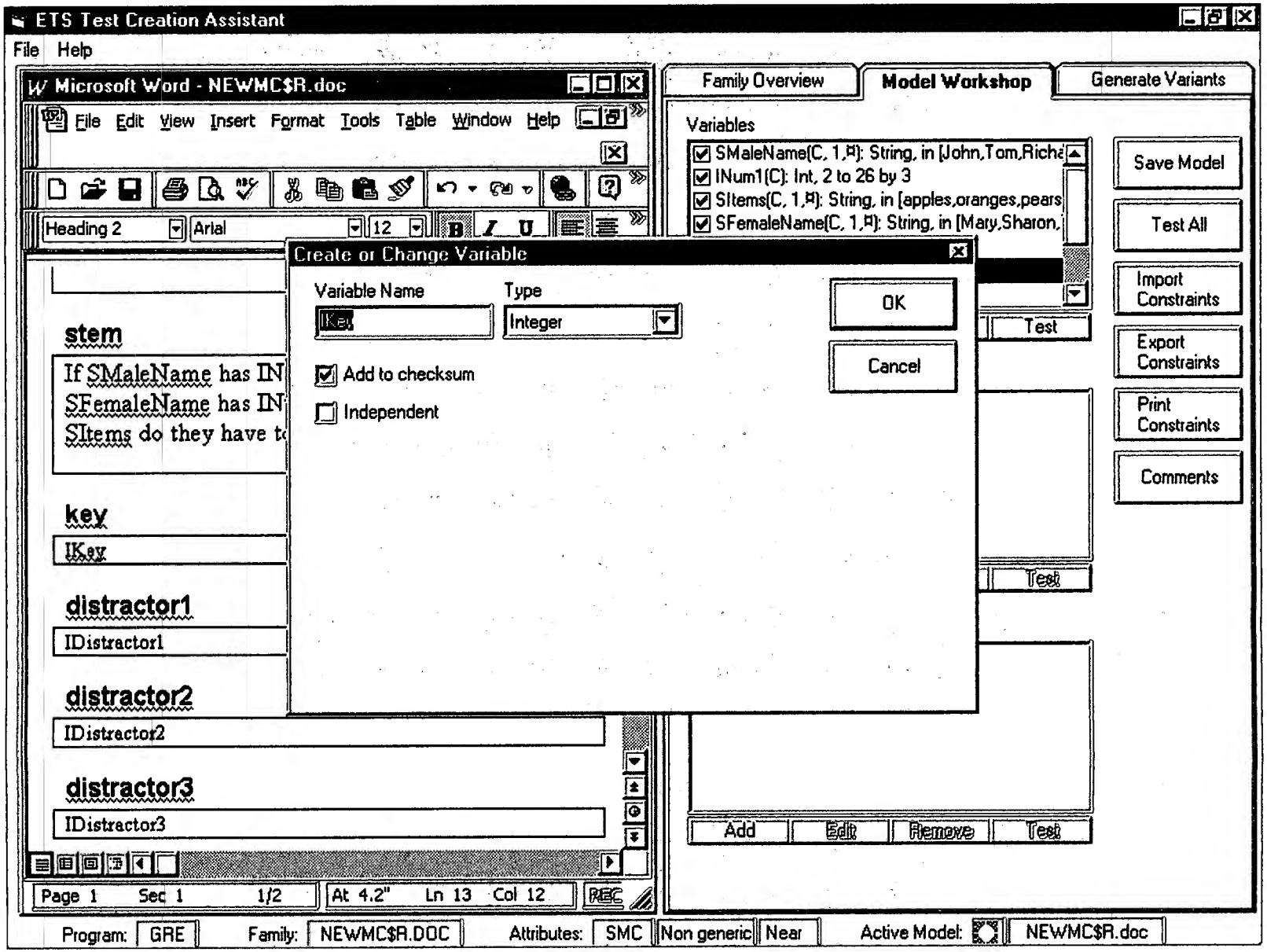

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has IN
SFemaleName has IN
SItems do they have t
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Create or Change Variable
Variable Name
Key
Type
Integer
Add to checksum
Independent
OK
Cancel
Family Overview
Model Workshop
Generate Variants
Variables
SMaleName(C, 1,*): String, in [John,Tom,Richa
INum1(C): Int, 2 to 26 by 3
SItems(C, 1,*): String, in [apples,oranges,pears
SFemaleName(C, 1,*): String, in [Mary,Sharon,
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Test
Test
Add
Edit
Remove
Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 28

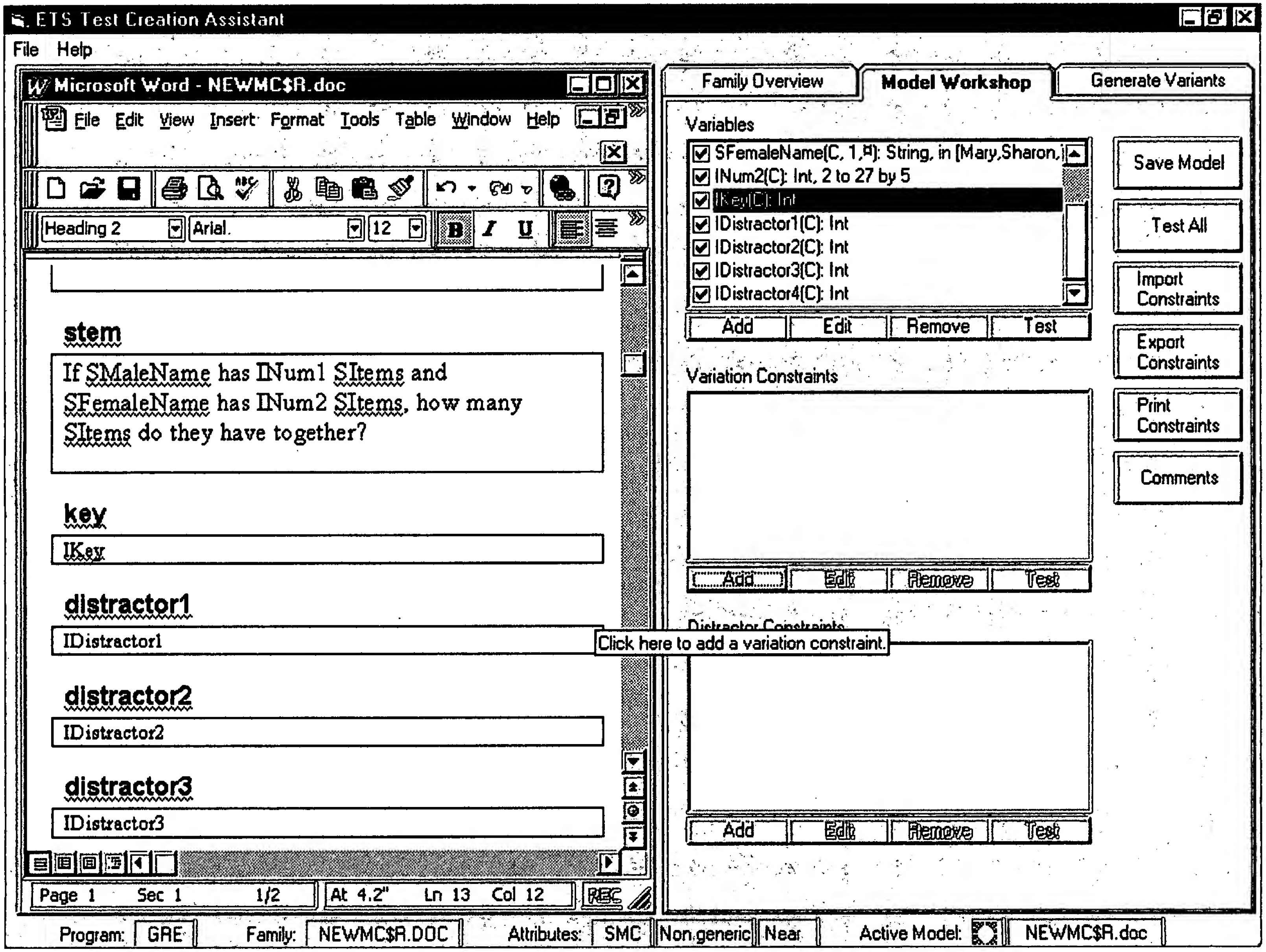

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,月): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Click here to add a variation constraint.
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non.generic Near
Active Model: NEWMC$R.doc

FIG. 29

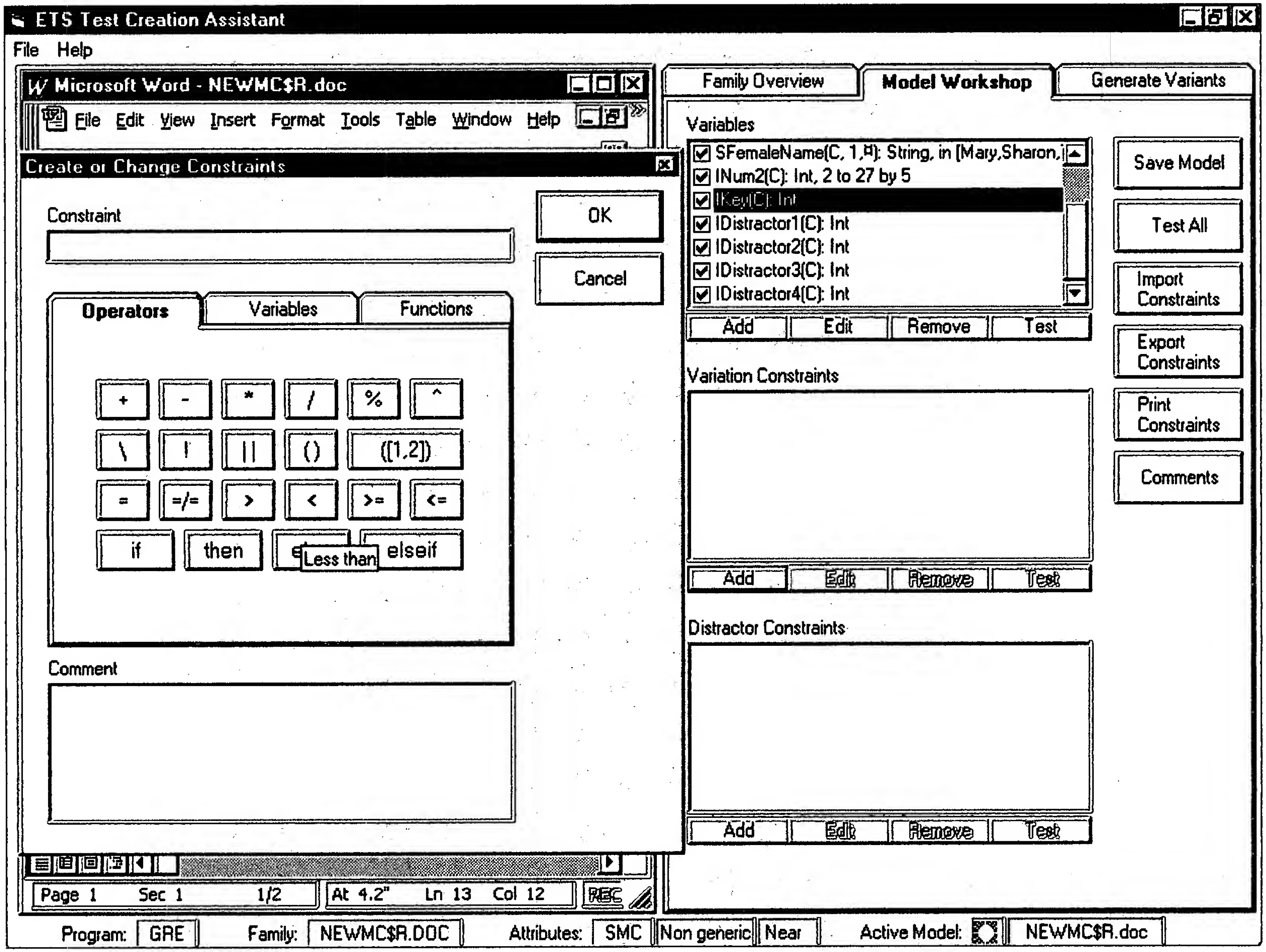

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
+
-
*
/
%
^
\
!
||
()
([1,2])
=
=/=
>
<
>=
<=
if
then
Less than
elseif
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,"): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 30

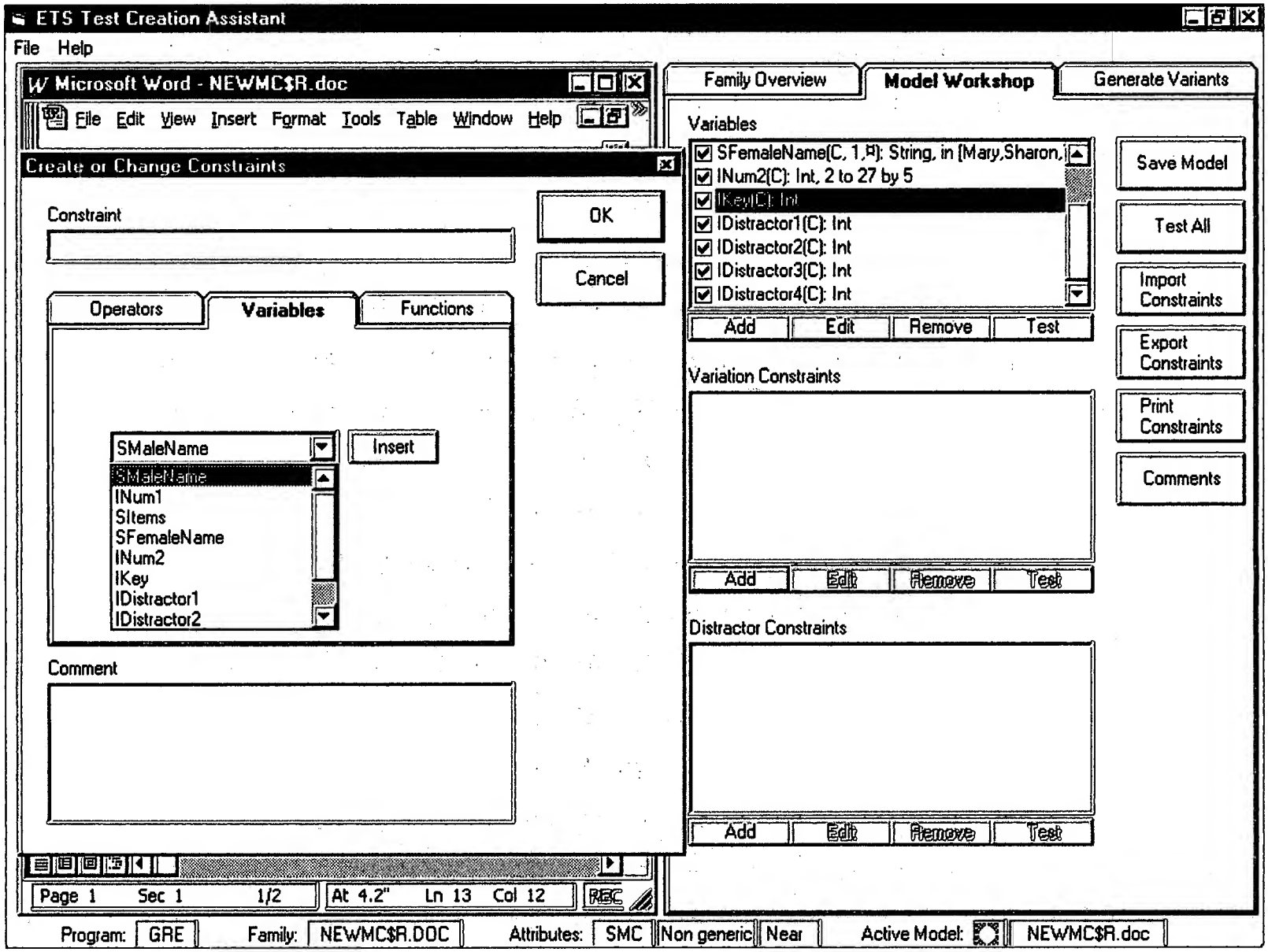

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
SMaleName
Insert
SMaleName
INum1
SItems
SFemaleName
INum2
IKey
IDistractor1
IDistractor2
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,4): String, in {Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 31

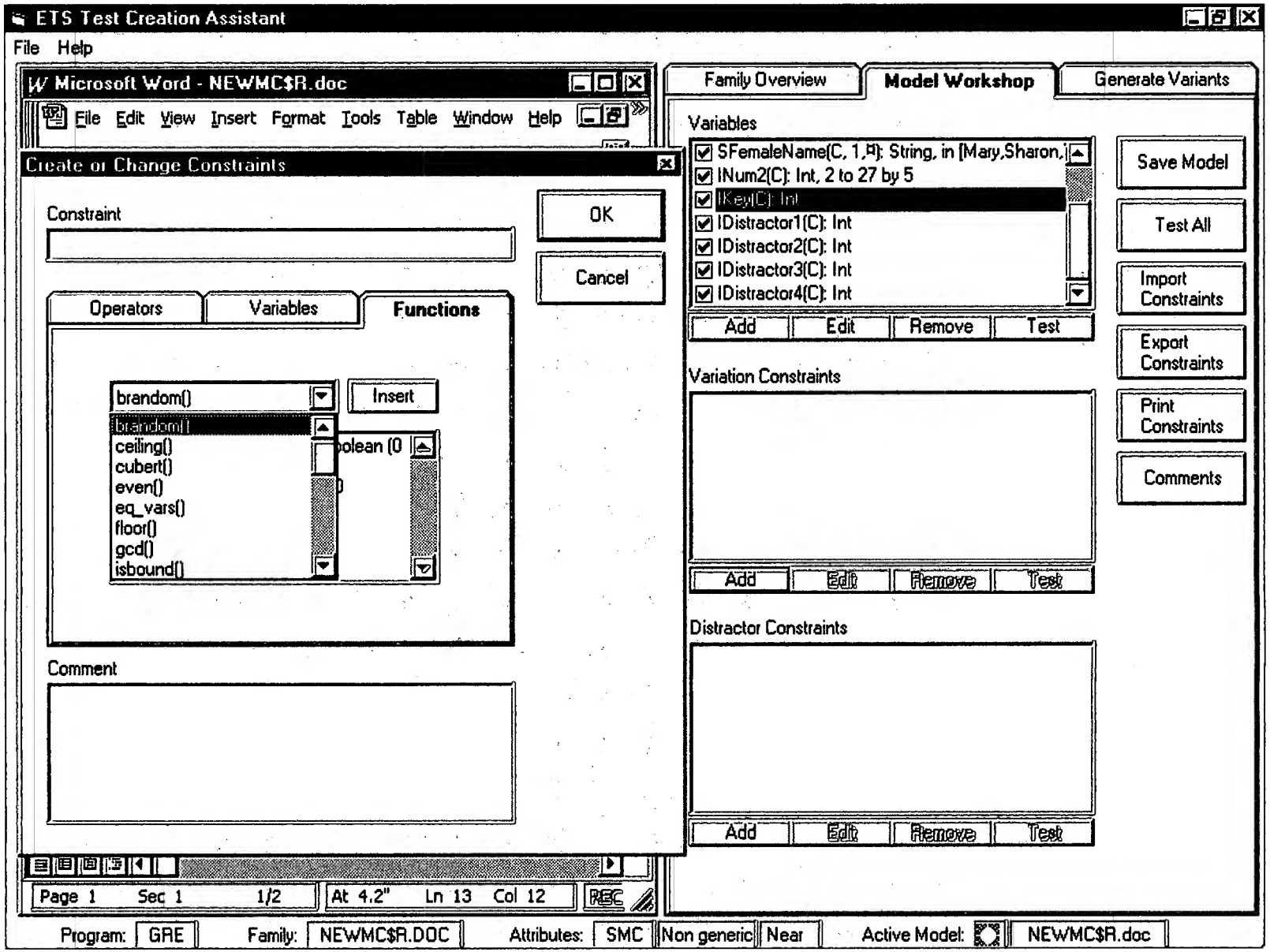
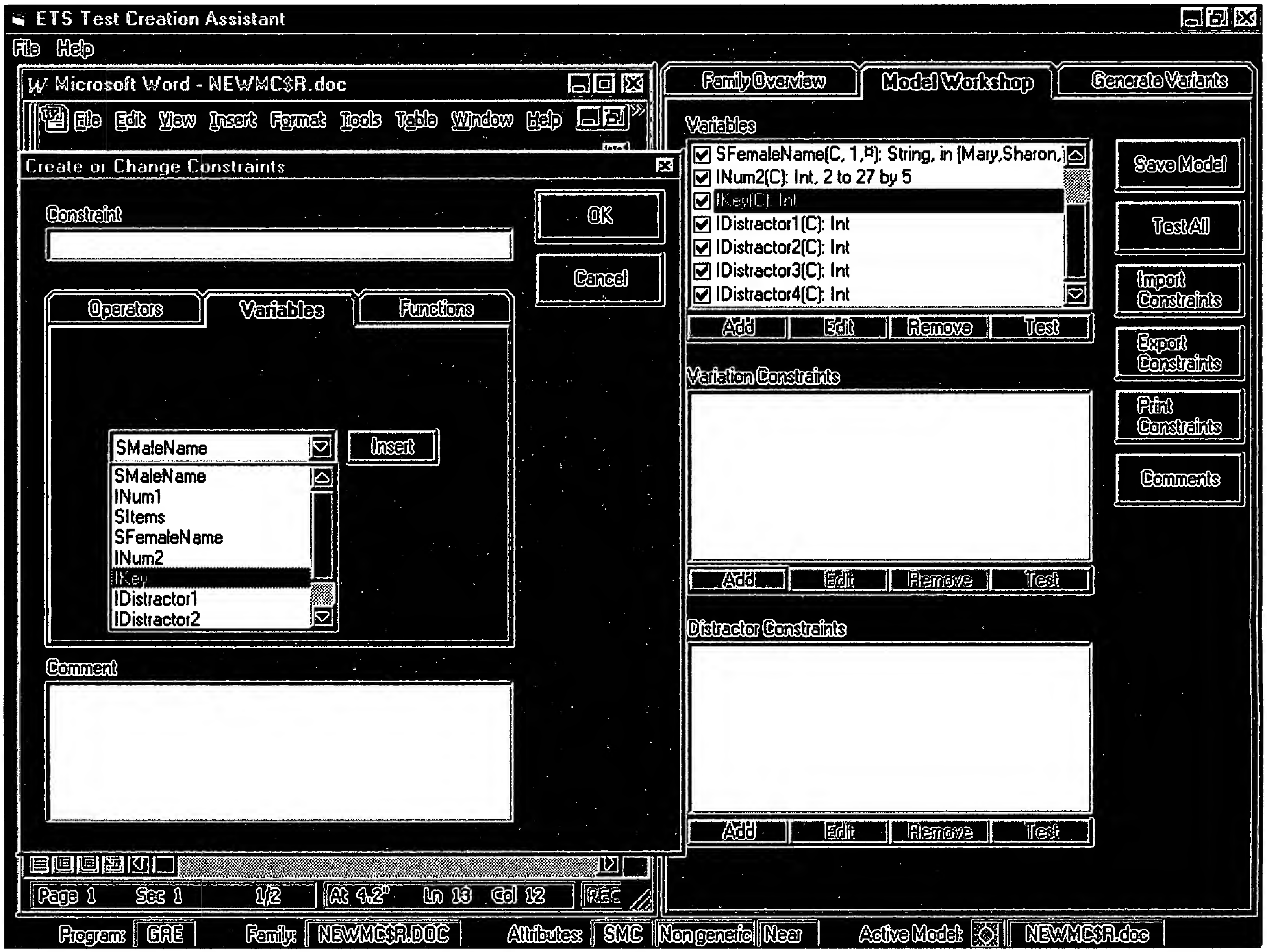

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
brandom()
Insert
brandom()
ceiling()
cubert()
even()
eq_vars()
floor()
gcd()
isbound()
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,#): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 32



ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
OK
Cancel
Operators
Variables
Functions
SMaleName
Insert
SMaleName
INum1
SItems
SFemaleName
INum2
IKey
IDistractor1
IDistractor2
Comment
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,A): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 33

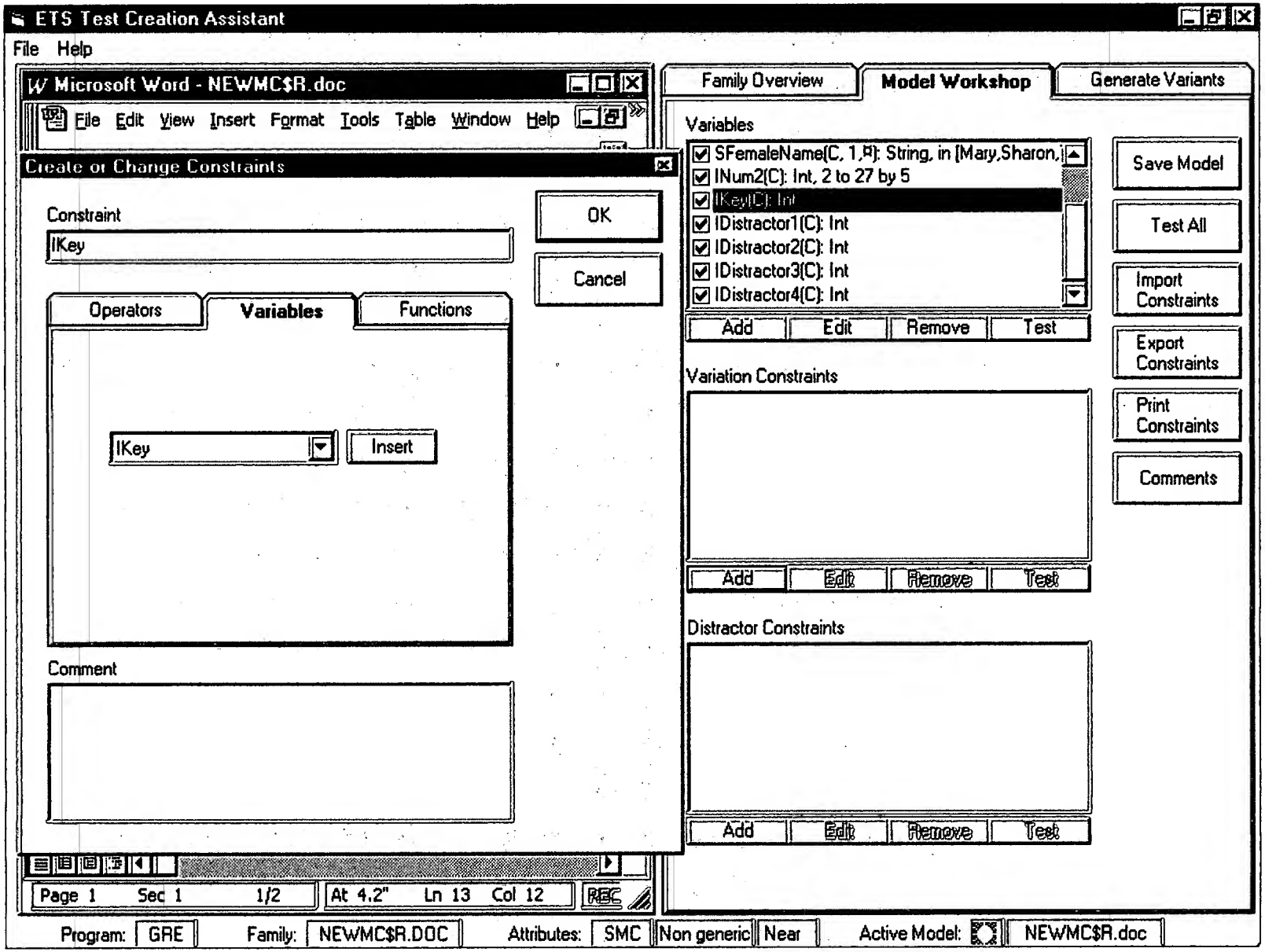

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
IKey
OK
Cancel
Operators
Variables
Functions
IKey
Insert
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 34

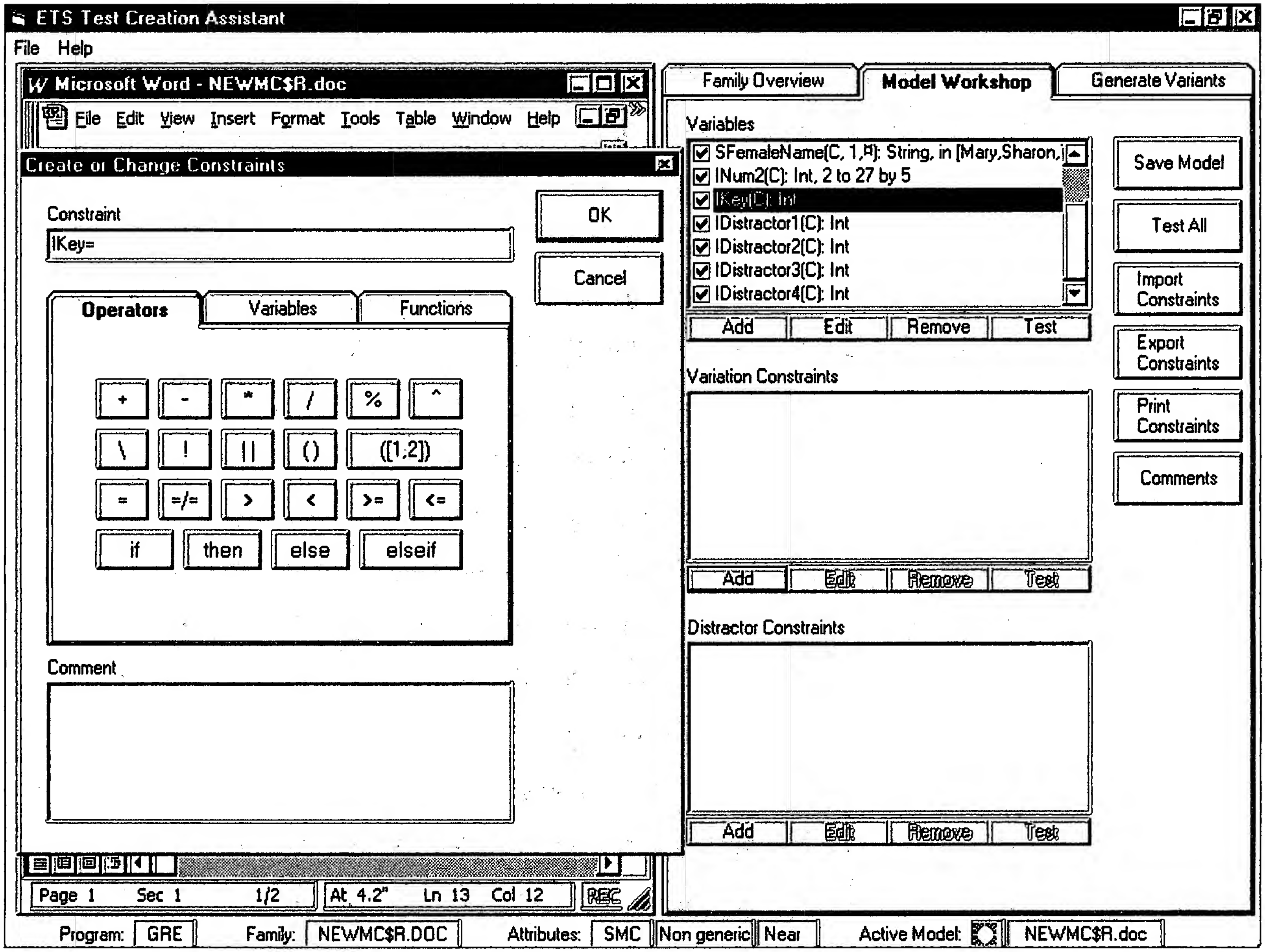

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
lKey=
OK
Cancel
Operators
Variables
Functions
+ - * / % ^
\ ! || () ([1;2])
= =/= > < >= <=
if then else elseif
Comment
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,4): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 35

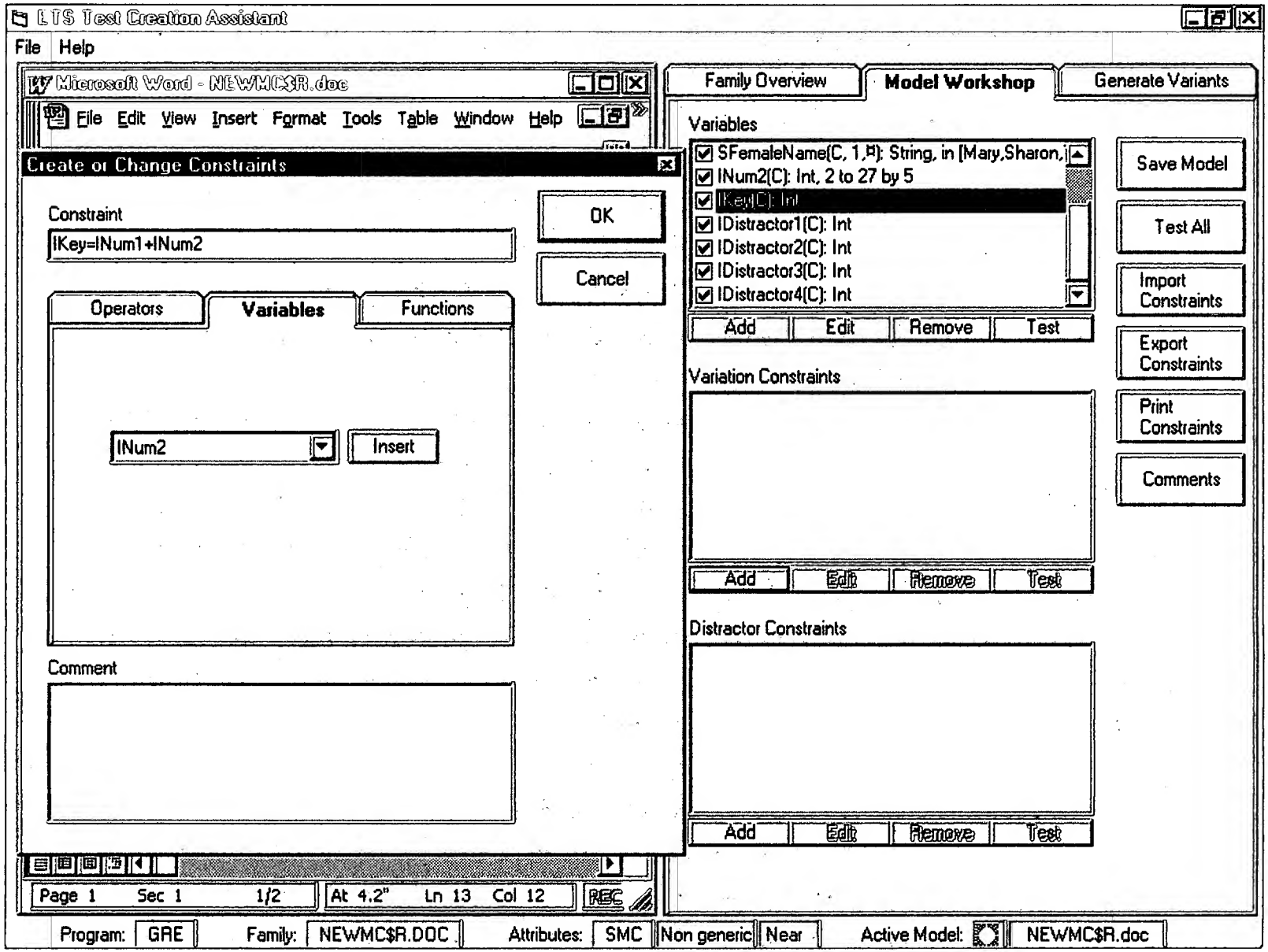

LTS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Create or Change Constraints
Constraint
IKey=INum1+INum2
OK
Cancel
Operators
Variables
Functions
INum2
Insert
Comment
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,#): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 36

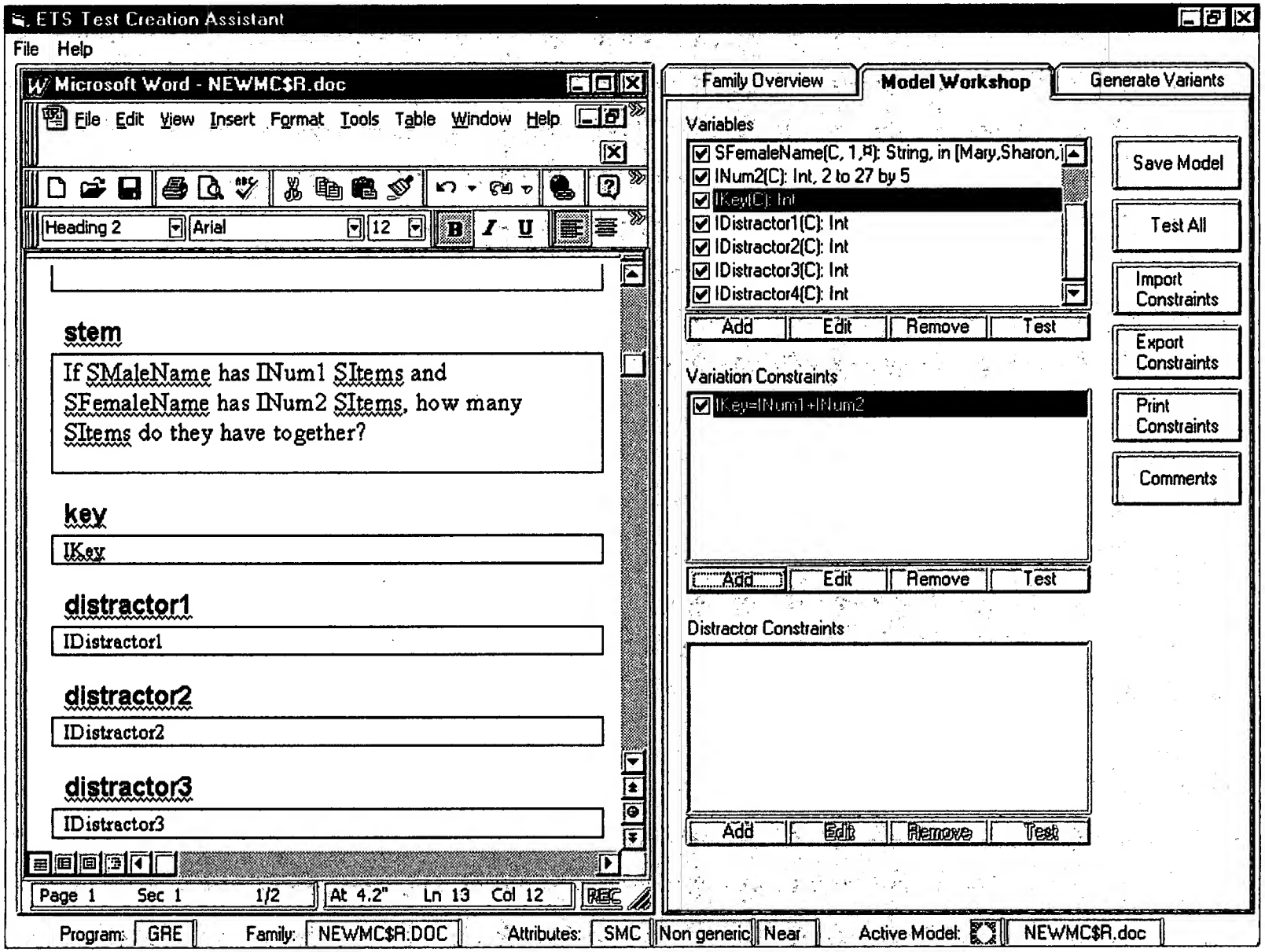

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,#): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add
Edit
Remove
Test
Variation Constraints
IKey=INum1+INum2
Add
Edit
Remove
Test
Distractor Constraints
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 37

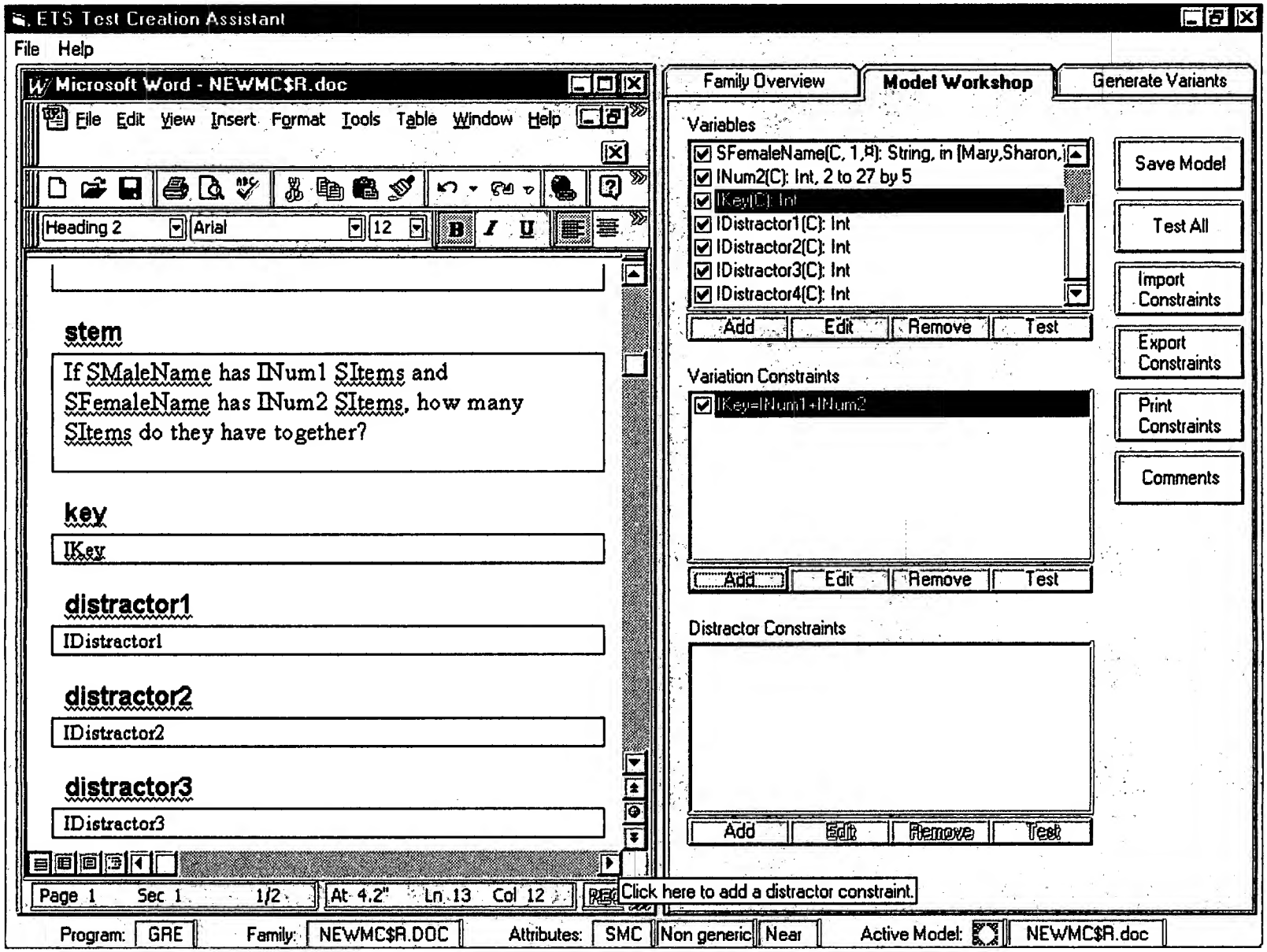

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
Click here to add a distractor constraint.
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
IKey=INum1+INum2
Add Edit Remove Test
Distractor Constraints
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 38

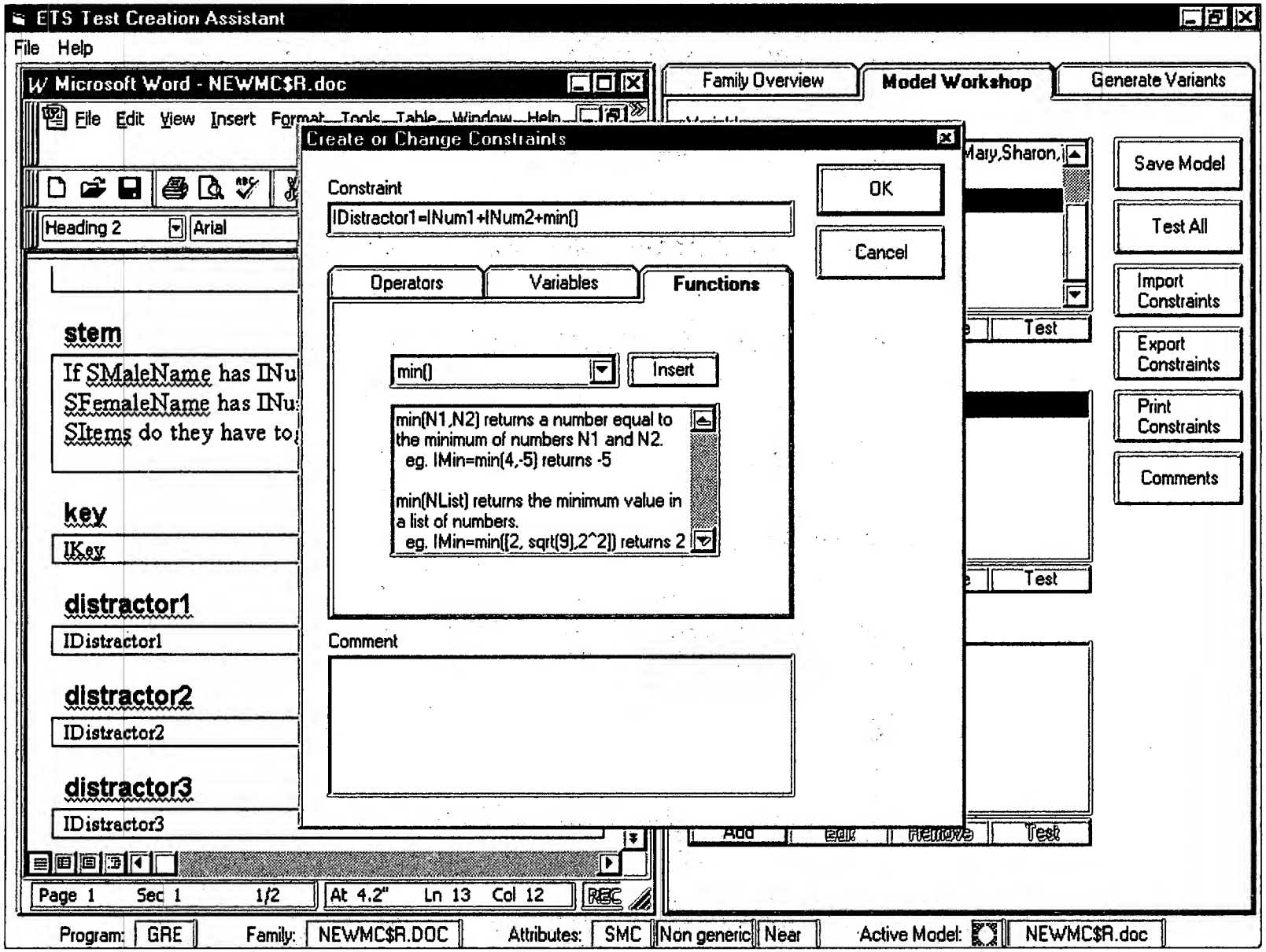


FIG. 39

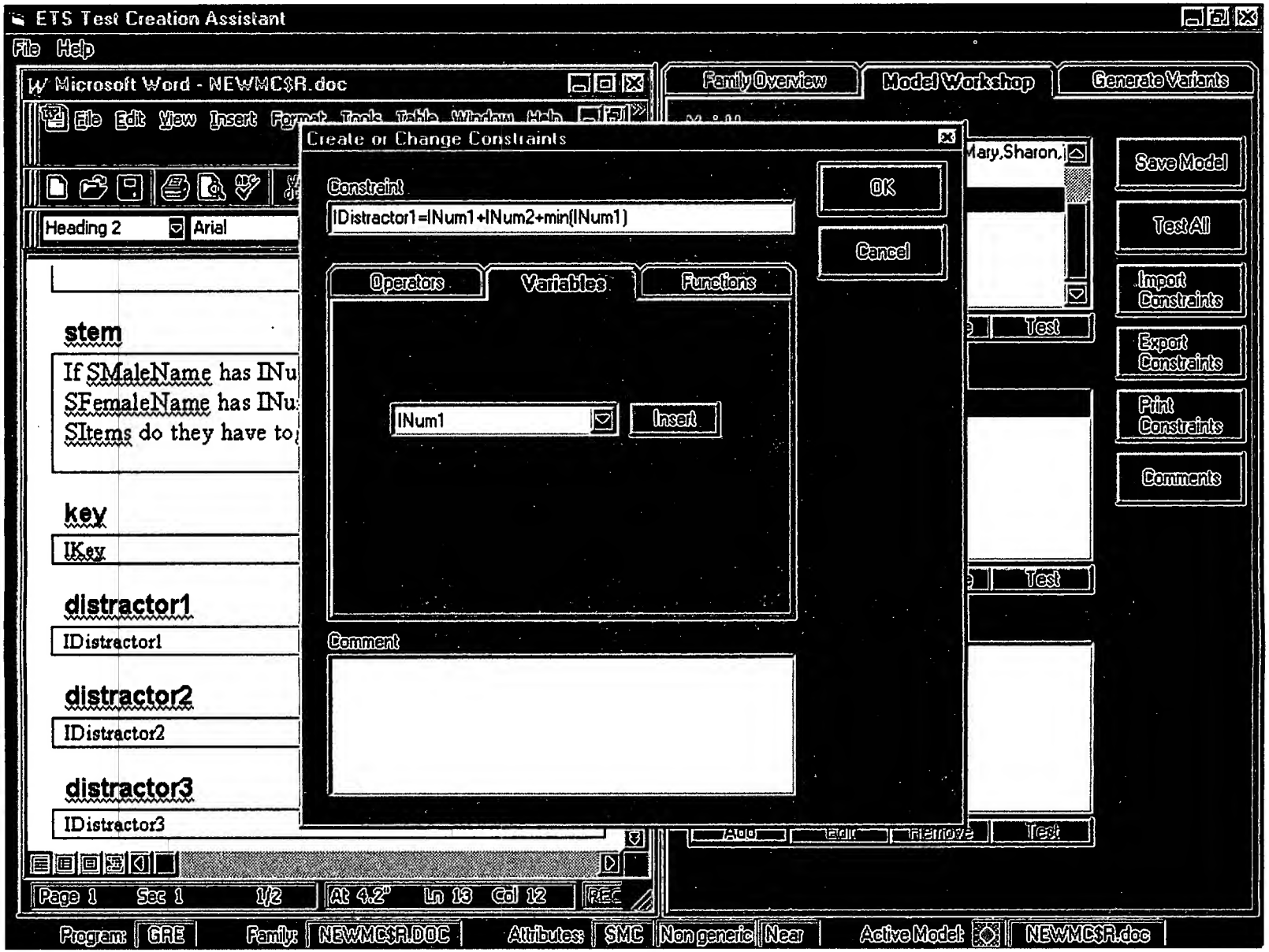

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMCSR.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
stem
If SMaleName has INu
SFemaleName has INu
SItems do they have to
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Create or Change Constraints
Constraint
IDistractor1=INum1+INum2+min(INum1)
OK
Cancel
Operators
Variables
Functions
INum1
Insert
Comment
Mary,Sharon,
Test
Test
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMCSR.DOC
Attributes: SMC Non generic Near
Active Model:
NEWMCSR.doc

FIG. 40

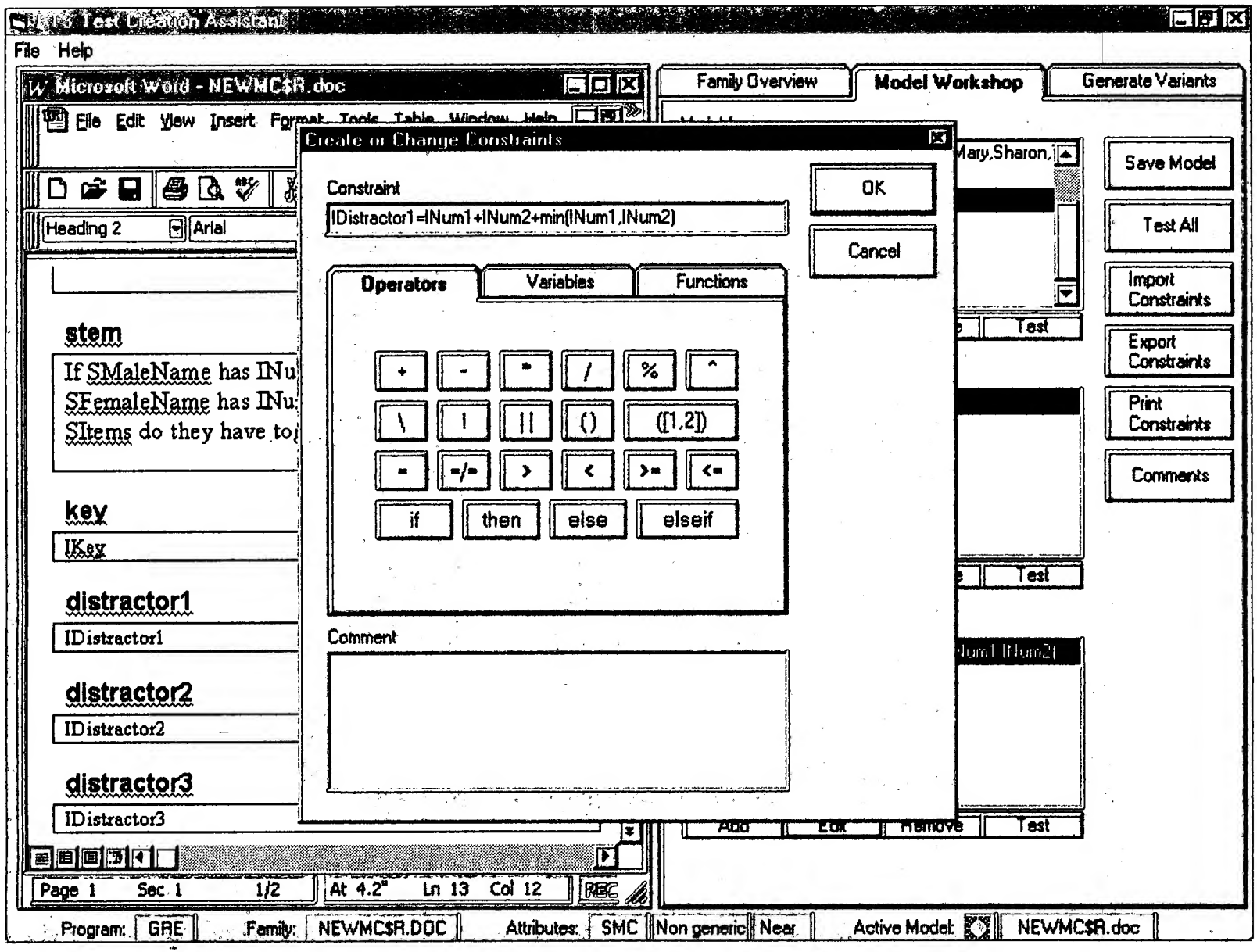

Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
Family Overview
Model Workshop
Generate Variants
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Constraints
Constraint
IDistractor1=INum1+INum2+min(INum1,INum2)
OK
Cancel
Operators
Variables
Functions
+ - * / % ^
\ | || () ([1,2])
= =/= > < >= <=
if then else elseif
Comment
stem
If SMaleName has INu
SFemaleName has INu
SItems do they have to
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Mary,Sharon,
Test
Add
Edit
Remove
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model:
NEWMC$R.doc

FIG. 41

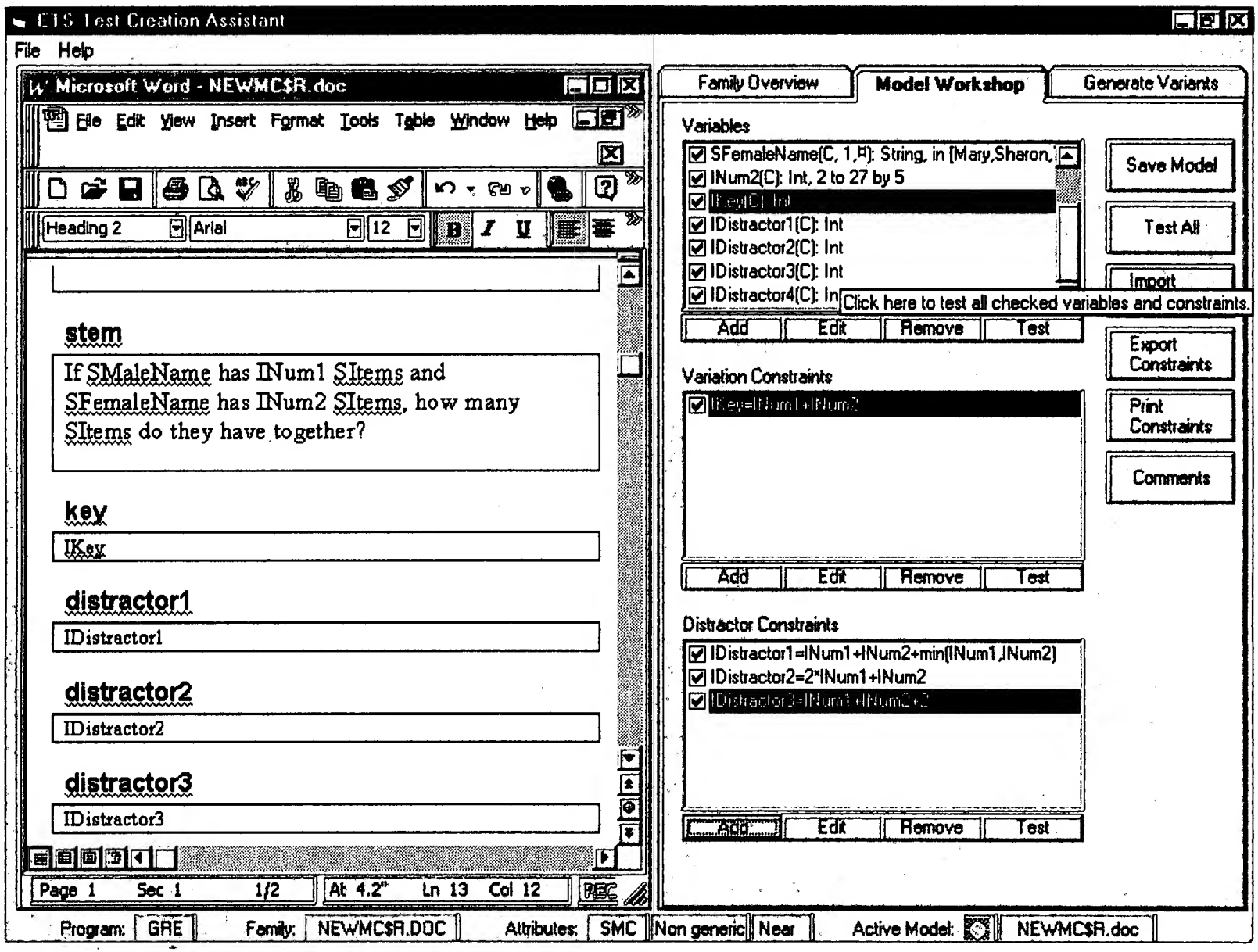

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): In
Click here to test all checked variables and constraints.
Add Edit Remove Test
Save Model
Test All
Import
Export Constraints
Print Constraints
Comments
Variation Constraints
IKey=INum1+INum2
Add Edit Remove Test
Distractor Constraints
IDistractor1=INum1+INum2+min(INum1,INum2)
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+2
Add Edit Remove Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 42

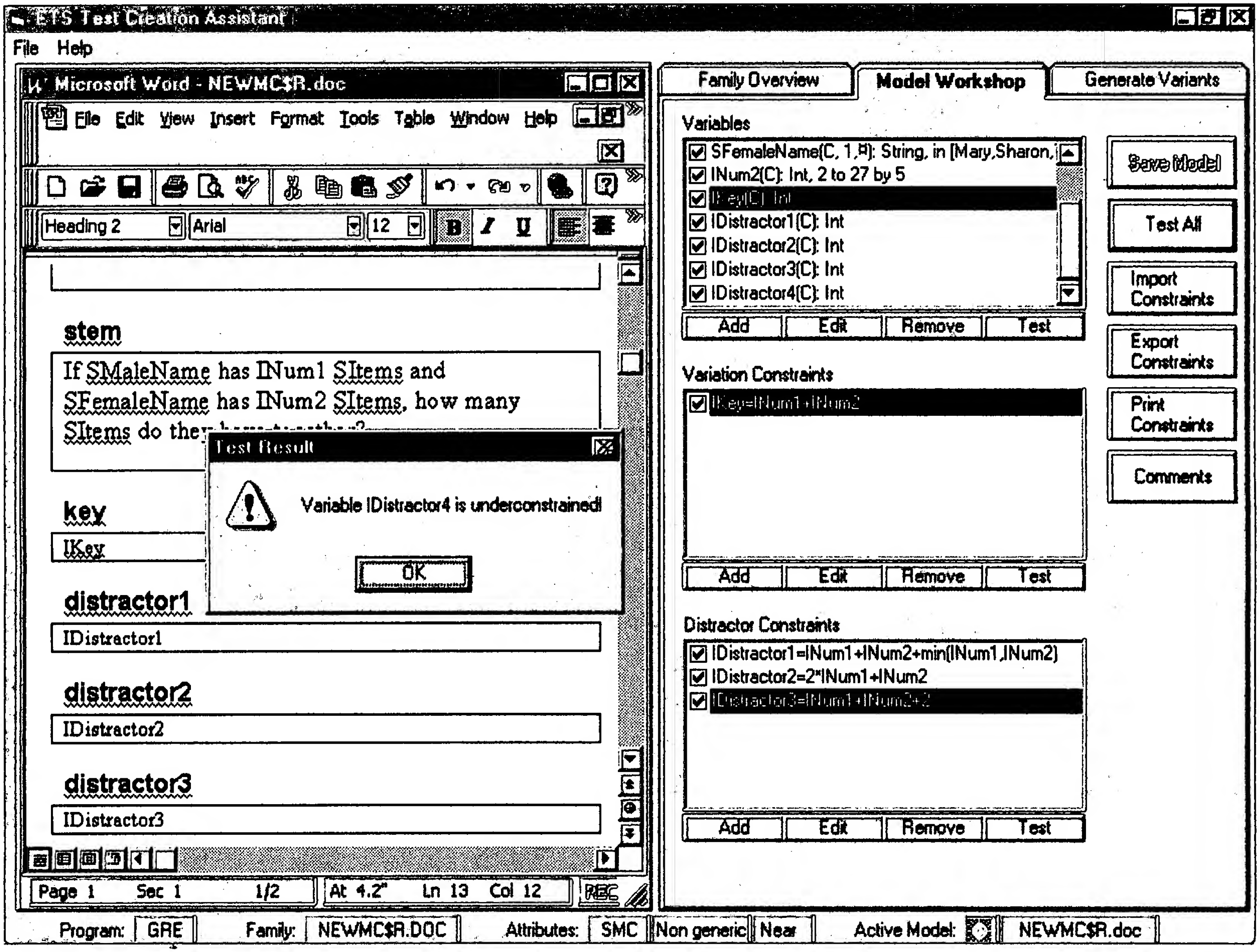

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Test Result
Variable IDistractor4 is underconstrained!
OK
Page 1 Sec 1 1/2 At 4.2" Ln 13 Col 12
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
IKey=INum1+INum2
Add Edit Remove Test
Distractor Constraints
IDistractor1=INum1+INum2+min(INum1,INum2)
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+2
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 43

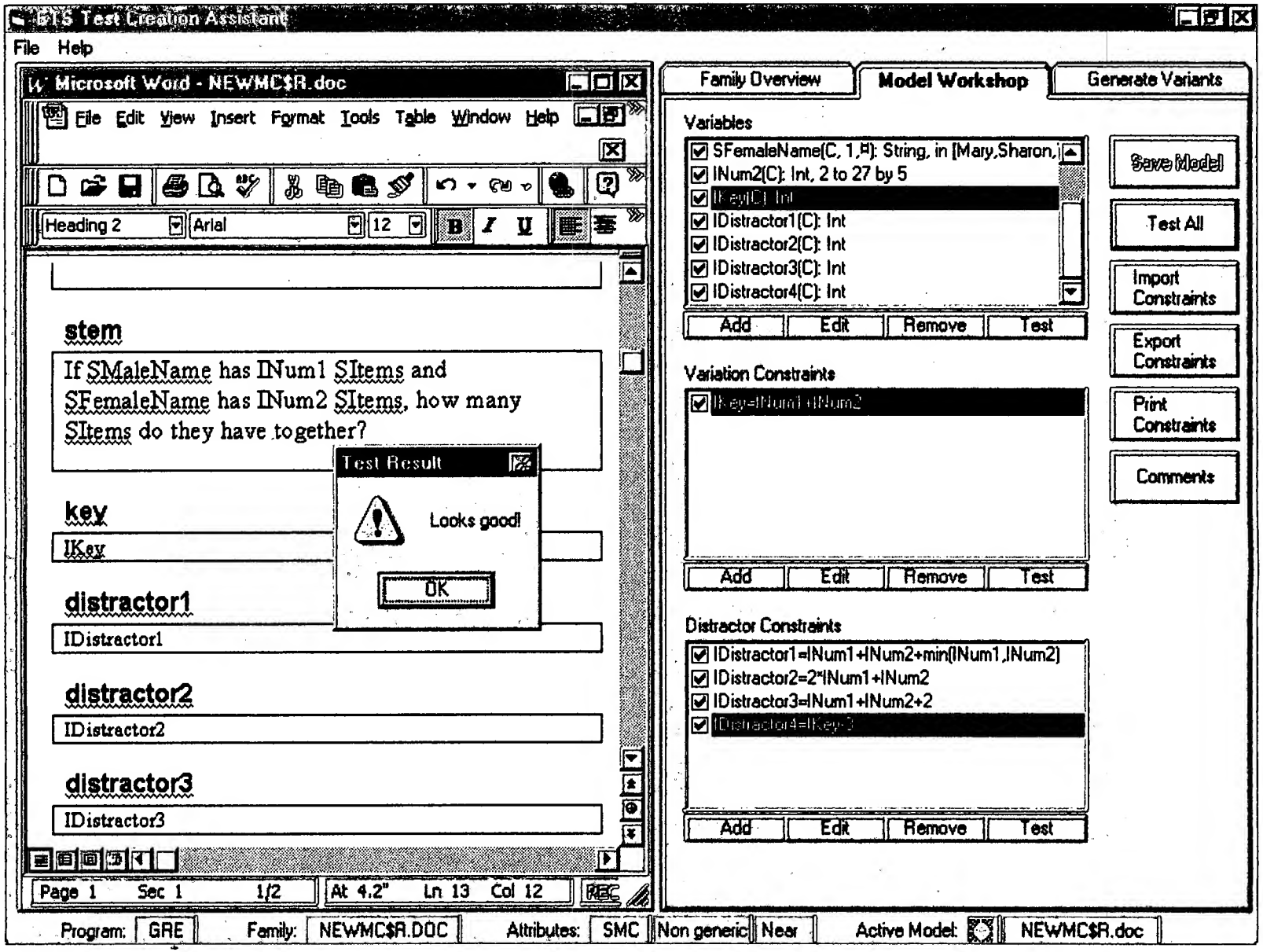


FIG. 44

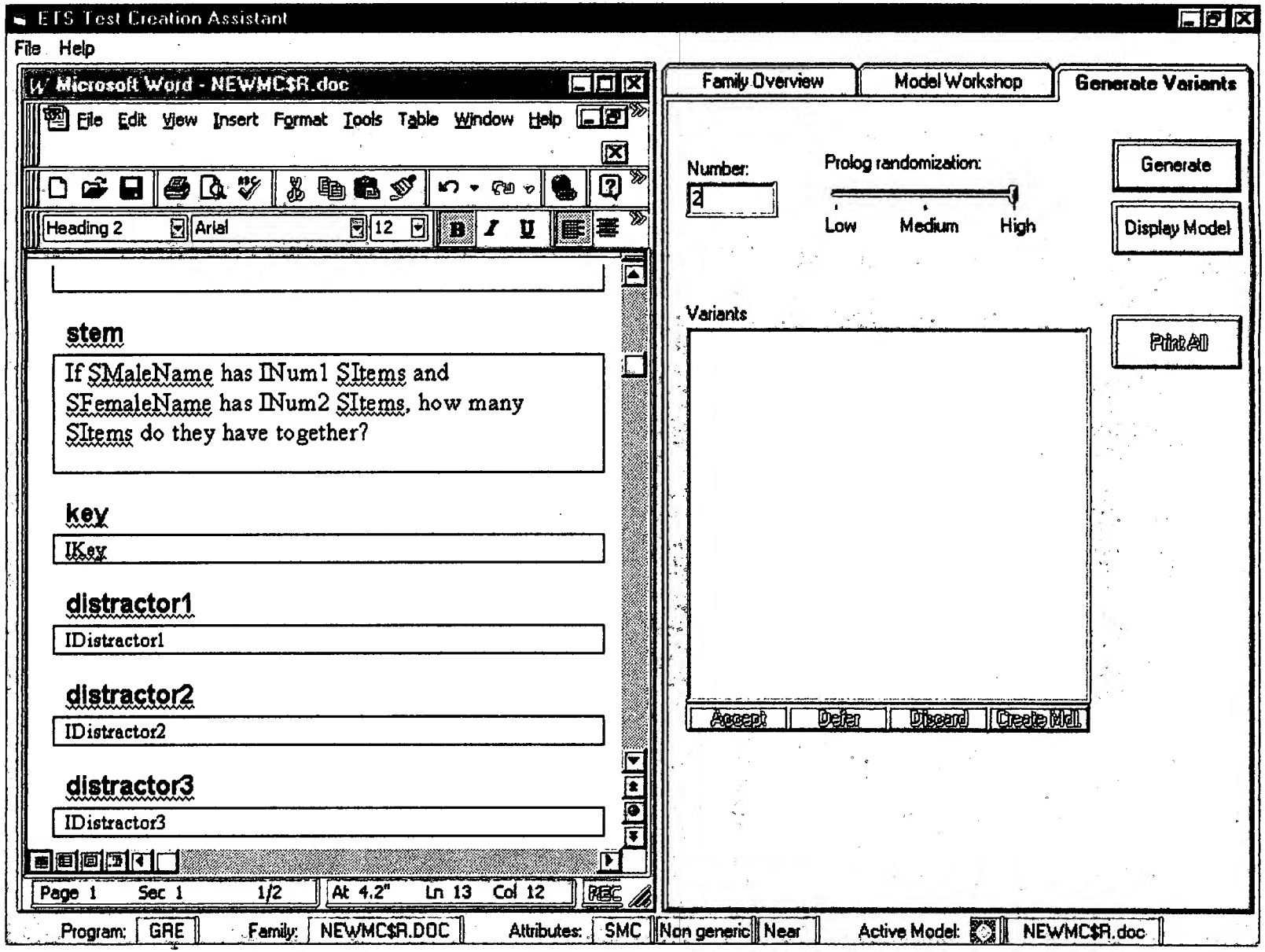

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 2
Arial
12
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
distractor3
IDistractor3
Page 1 Sec 1 1/2
At 4.2" Ln 13 Col 12
REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
Print All
Accept
Defer
Discard
Create Mdl
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 45

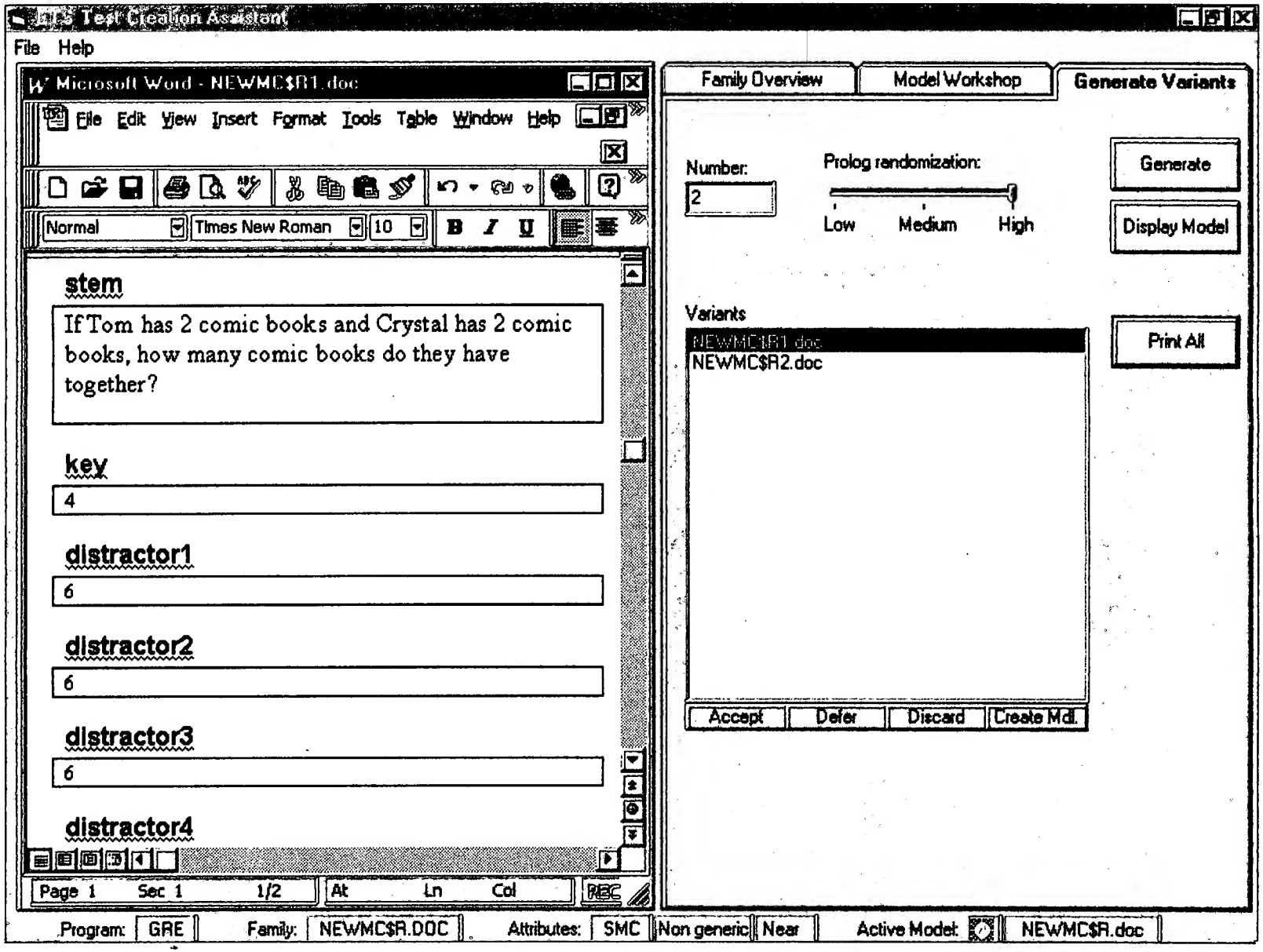

Test Creation Assistant
File Help
Microsoft Word - NEWMC$R1.doc
File Edit View Insert Format Tools Table Window Help
Normal
Times New Roman
10
stem
If Tom has 2 comic books and Crystal has 2 comic books, how many comic books do they have together?
key
4
distractor1
6
distractor2
6
distractor3
6
distractor4
Page 1 Sec 1 1/2
At Ln Col
REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R1.doc
NEWMC$R2.doc
Print All
Accept
Defer
Discard
Create Mdl
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 46

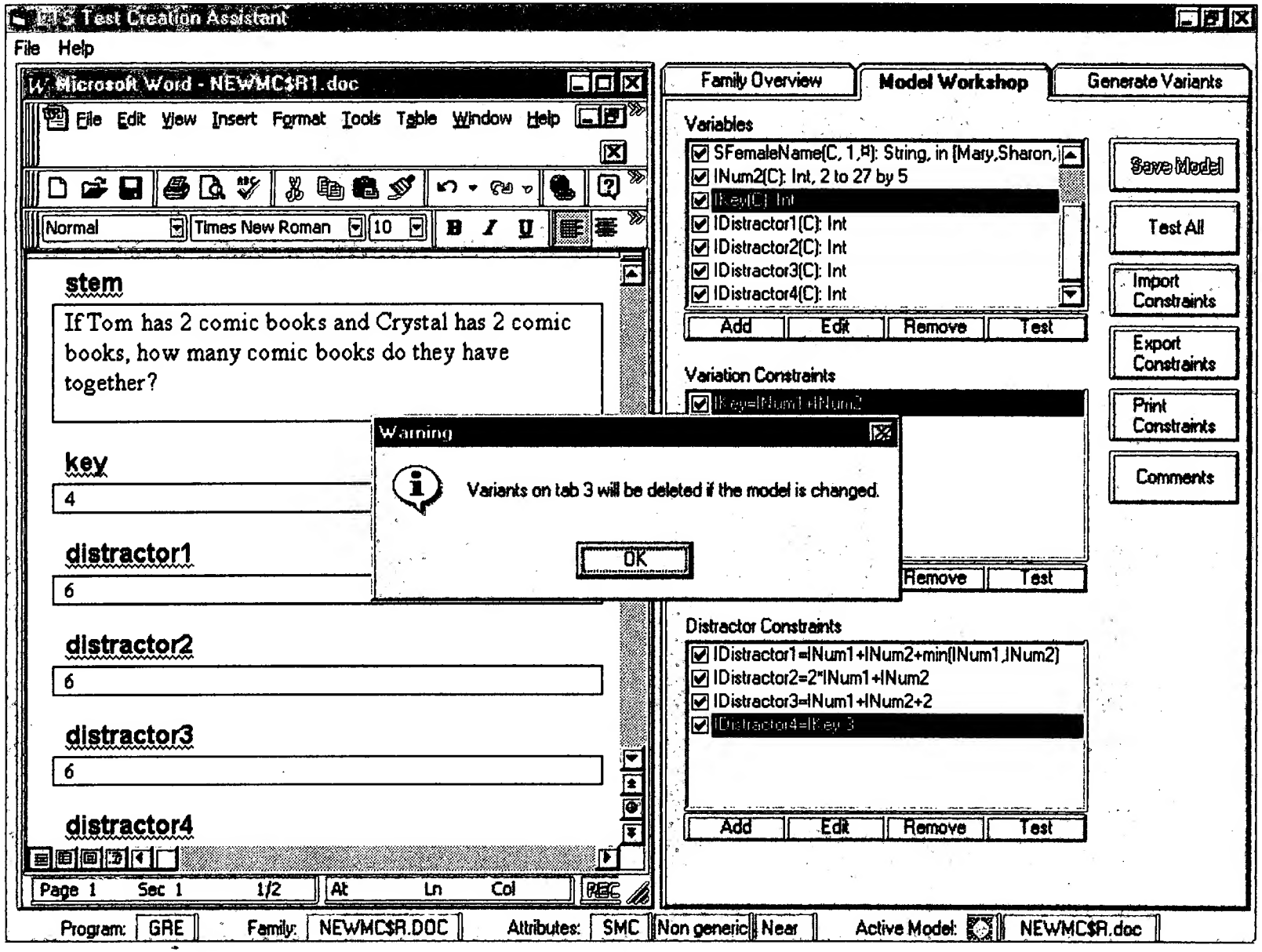

Test Creation Assistant
File Help
Microsoft Word - NEWMC$R1.doc
File Edit View Insert Format Tools Table Window Help
Normal Times New Roman 10
stem
If Tom has 2 comic books and Crystal has 2 comic books, how many comic books do they have together?
key
4
distractor1
6
distractor2
6
distractor3
6
distractor4
Page 1 Sec 1 1/2 At Ln Col REC
Warning
Variants on tab 3 will be deleted if the model is changed.
OK
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Variation Constraints
Remove Test
Distractor Constraints
IDistractor1=INum1+INum2+min(INum1,INum2)
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+2
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 47

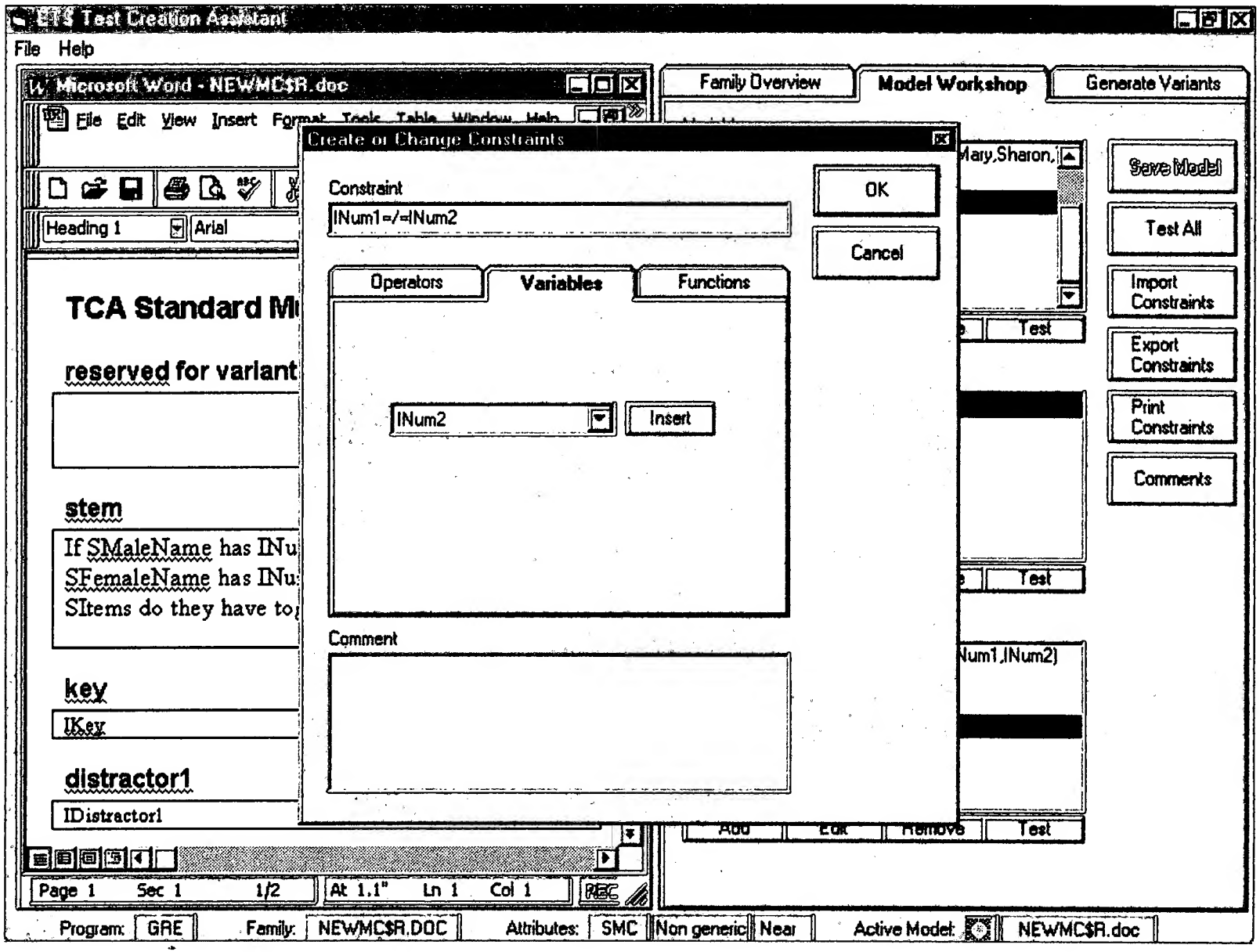

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
TCA Standard Mu
reserved for variant
stem
If SMaleName has INu
SFemaleName has INu
SItems do they have to
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Create or Change Constraints
Constraint
INum1=/=INum2
OK
Cancel
Operators
Variables
Functions
INum2
Insert
Comment
Family Overview
Model Workshop
Generate Variants
Mary,Sharon,
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Num1,INum2)
Add
Edit
Remove
Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 48

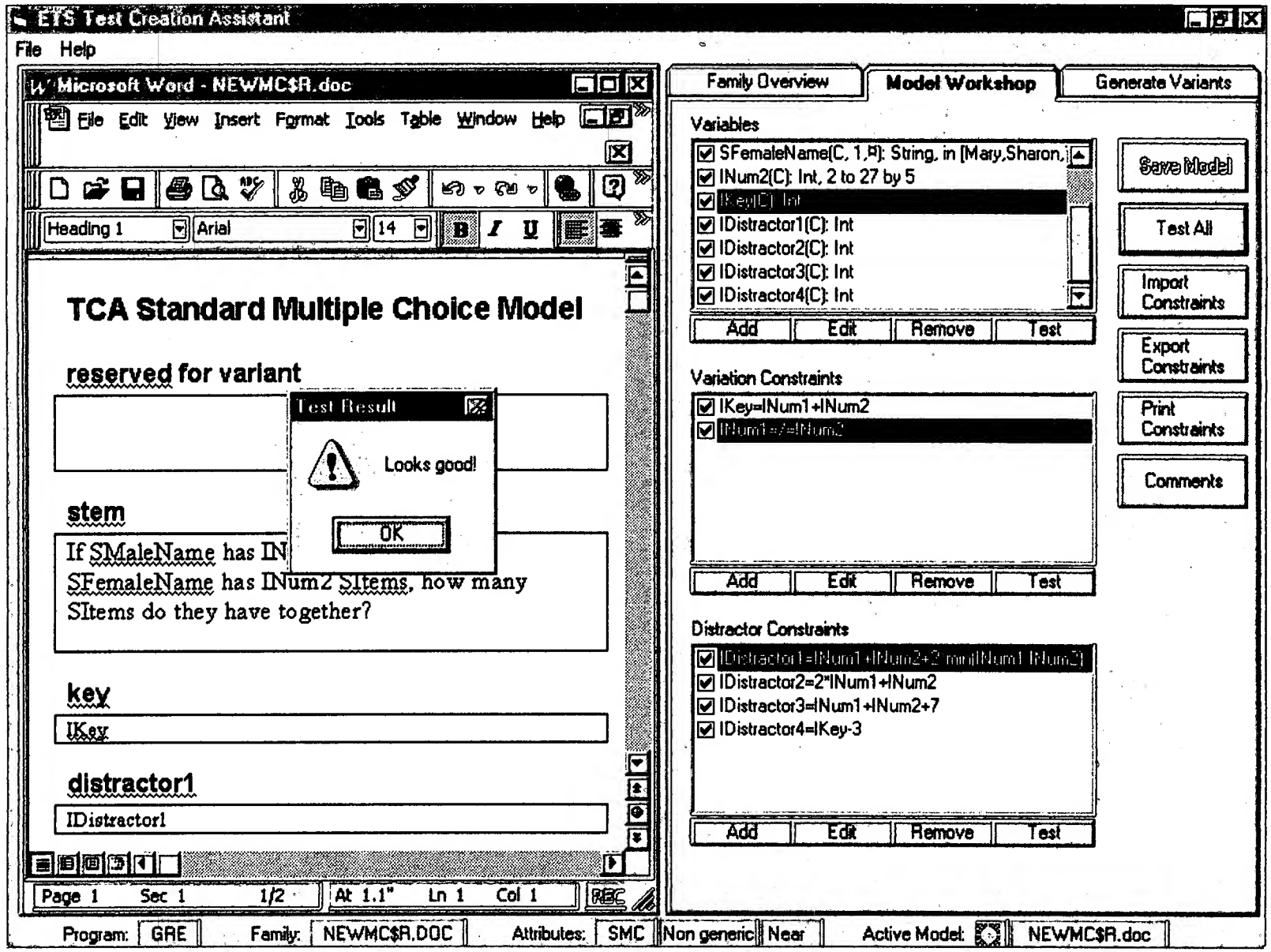

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
Test Result
Looks good!
OK
stem
If SMaleName has IN
SFemaleName has INum2 SItems, how many
SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Variation Constraints
IKey=INum1+INum2
Add Edit Remove Test
Distractor Constraints
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+7
IDistractor4=IKey-3
Add Edit Remove Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 49

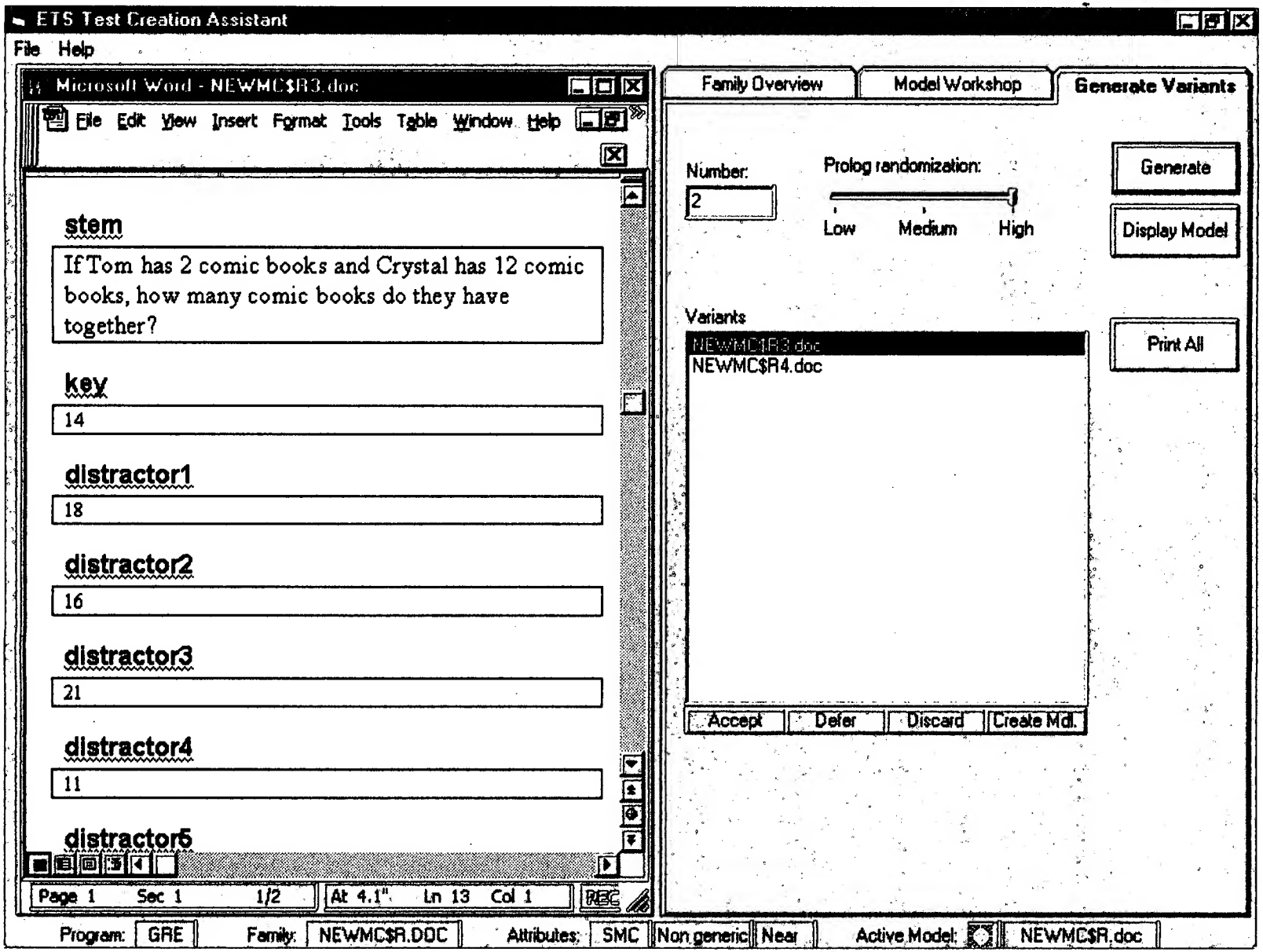

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R3.doc
File Edit View Insert Format Tools Table Window Help
stem
If Tom has 2 comic books and Crystal has 12 comic books, how many comic books do they have together?
key
14
distractor1
18
distractor2
16
distractor3
21
distractor4
11
distractor5
Page 1 Sec 1 1/2 At 4.1" Ln 13 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low Medium High
Generate
Display Model
Variants
NEWMC$R3.doc
NEWMC$R4.doc
Print All
Accept Defer Discard Create Mdl.
Program: GRE Family: NEWMC$R.DOC Attributes: SMC Non generic Near Active Model: NEWMC$R.doc

FIG. 50

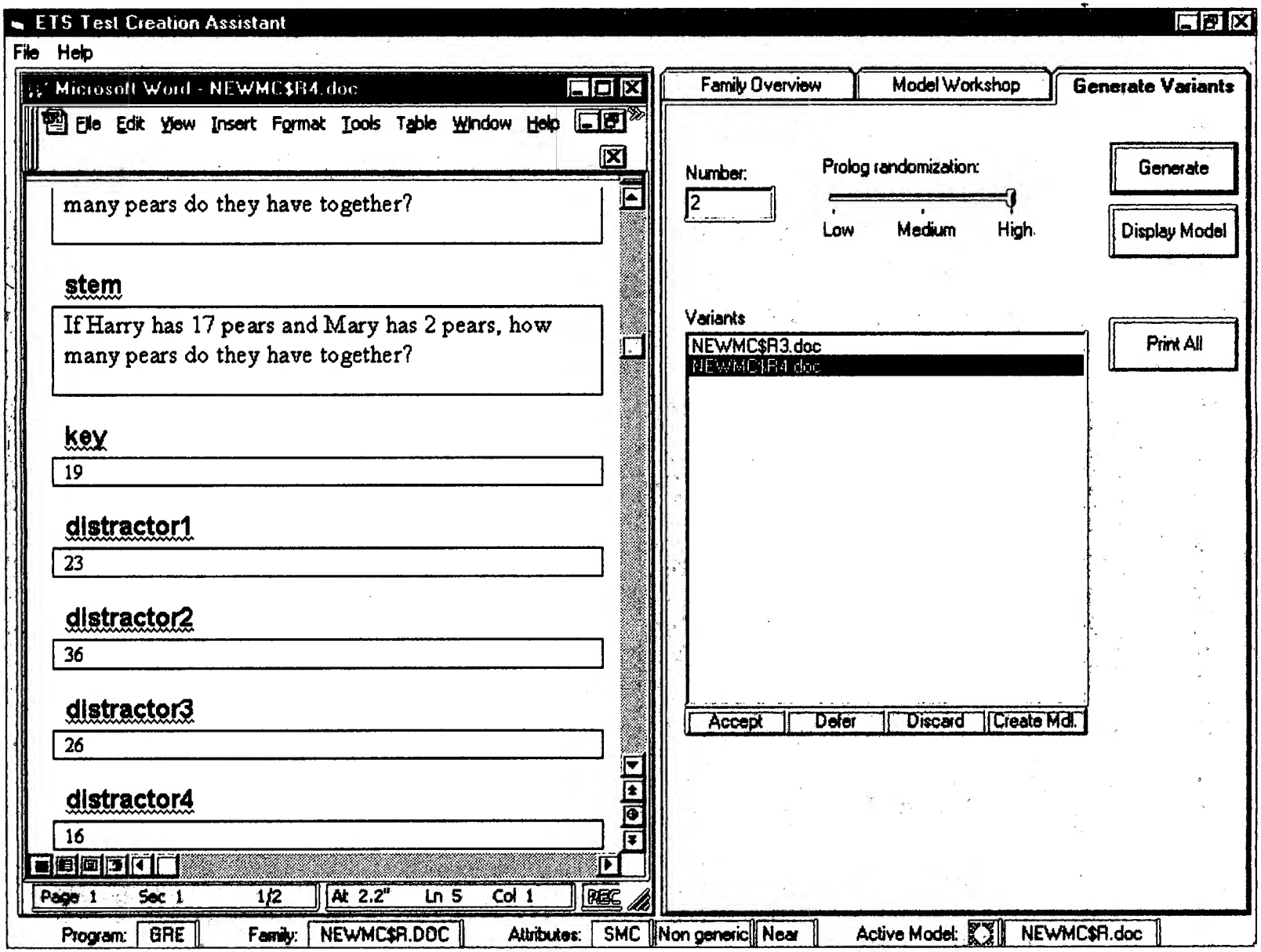

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R4.doc
File Edit View Insert Format Tools Table Window Help
many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
distractor2
36
distractor3
26
distractor4
16
Page 1 Sec 1 1/2
At 2.2" Ln 5 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R3.doc
NEWMC$R4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 51

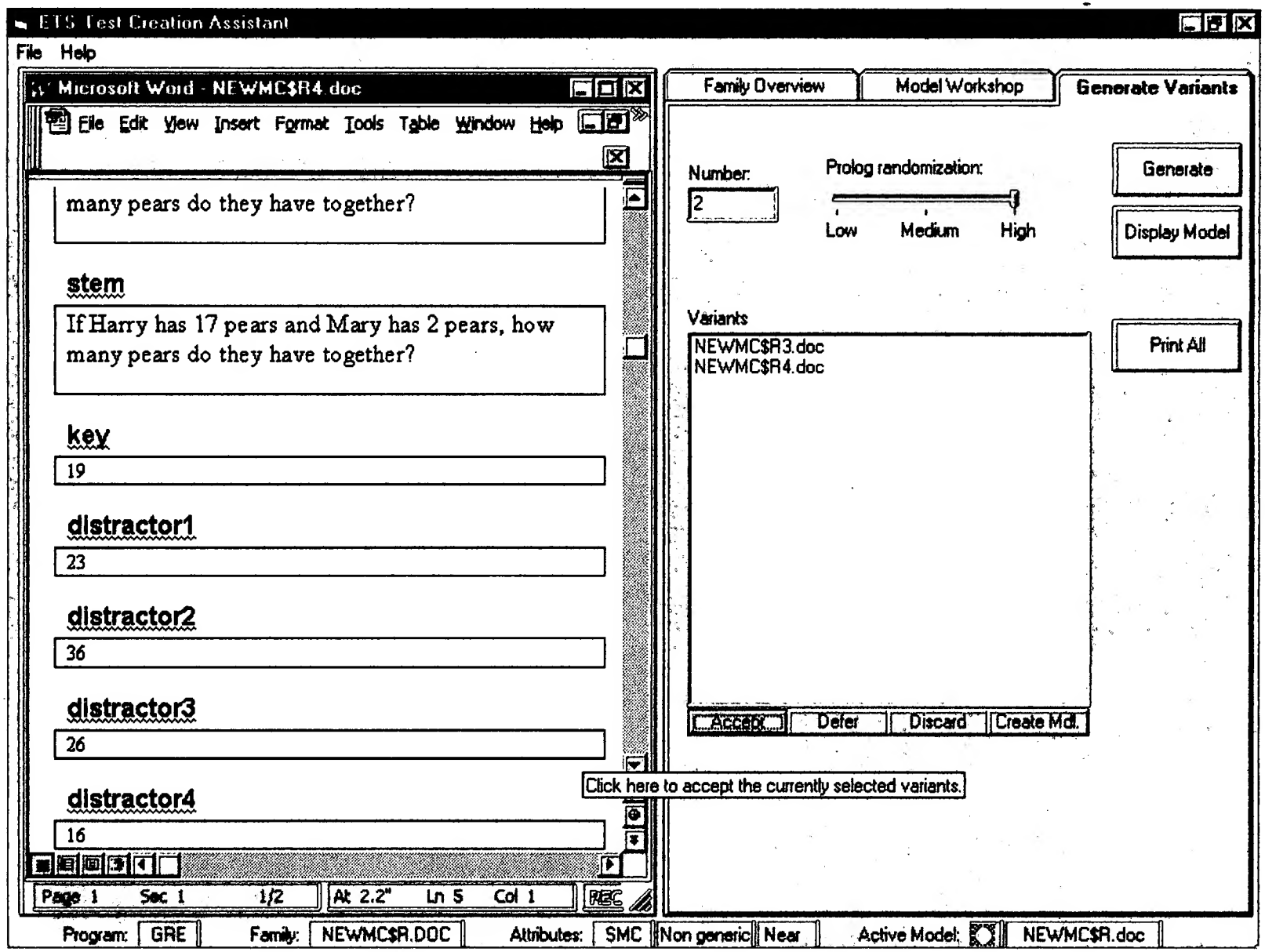

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R4.doc
File Edit View Insert Format Tools Table Window Help
many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
distractor2
36
distractor3
26
distractor4
16
Page 1 Sec 1 1/2
At 2.2" Ln 5 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R3.doc
NEWMC$R4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Click here to accept the currently selected variants.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 52

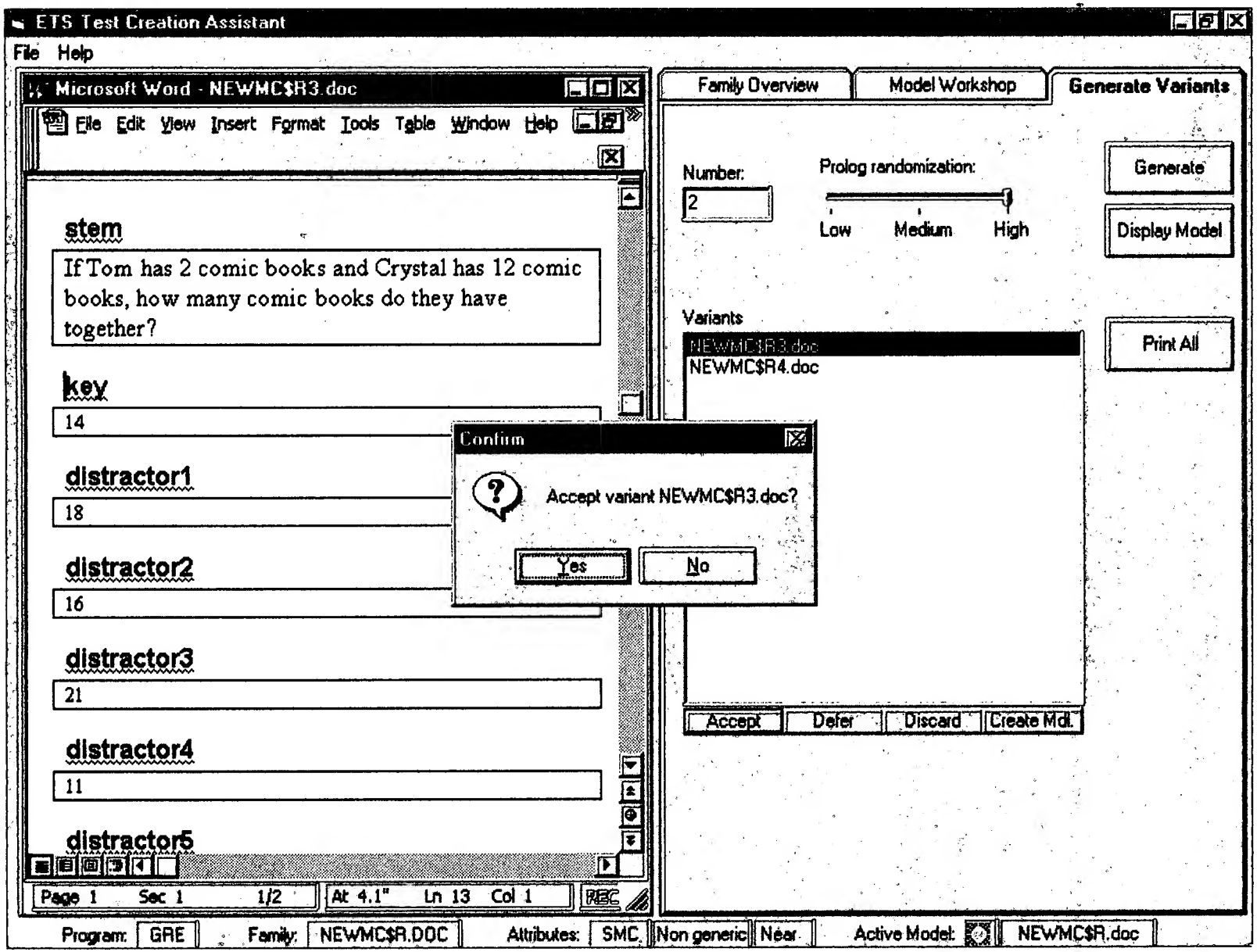

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R3.doc
File Edit View Insert Format Tools Table Window Help
stem
If Tom has 2 comic books and Crystal has 12 comic books, how many comic books do they have together?
key
14
distractor1
18
distractor2
16
distractor3
21
distractor4
11
distractor5
Page 1 Sec 1 1/2
At 4.1" Ln 13 Col 1
REC
Confirm
Accept variant NEWMC$R3.doc?
Yes
No
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R3.doc
NEWMC$R4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 53

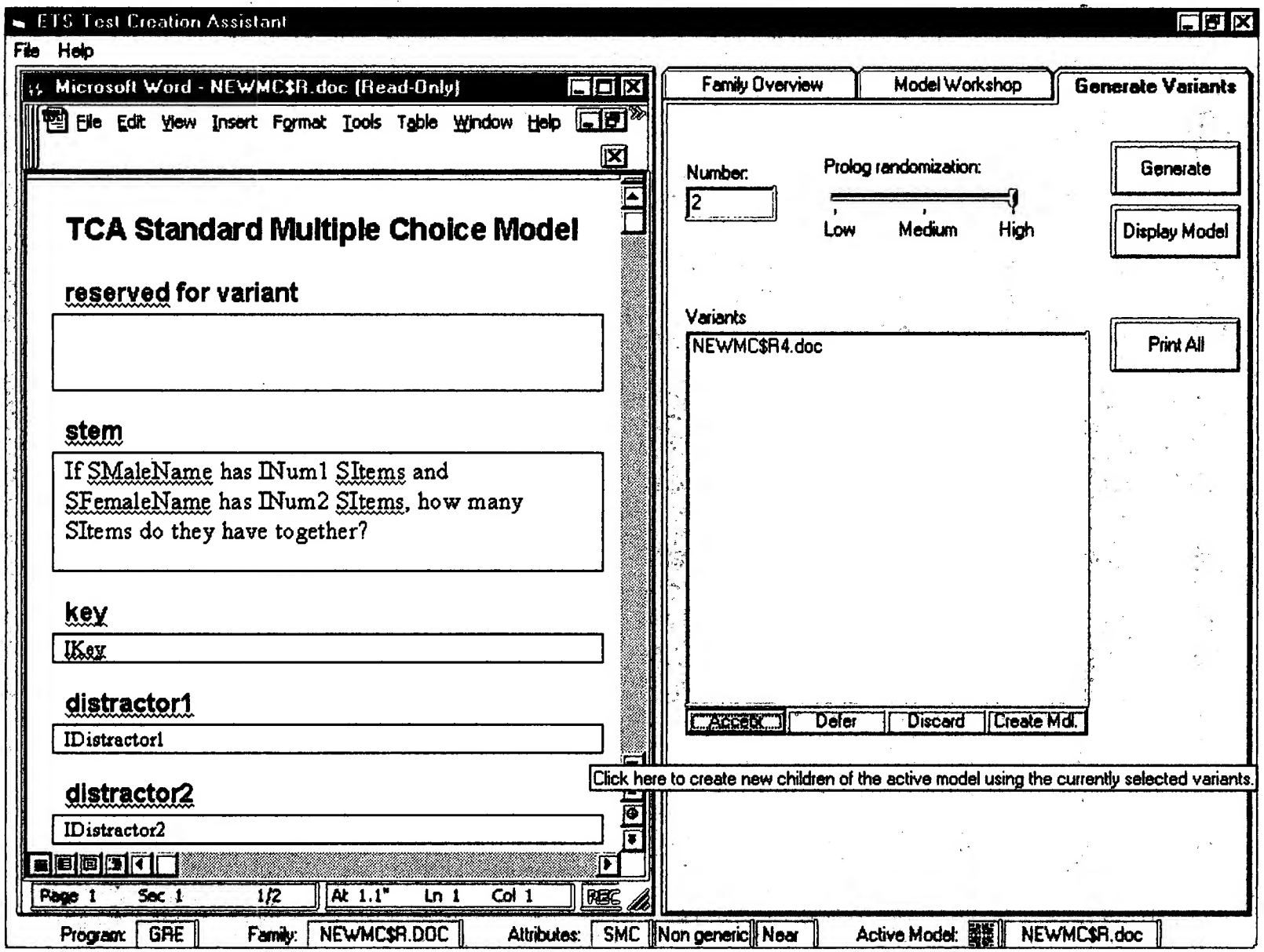

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc [Read-Only]
File Edit View Insert Format Tools Table Window Help
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Click here to create new children of the active model using the currently selected variants.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 54

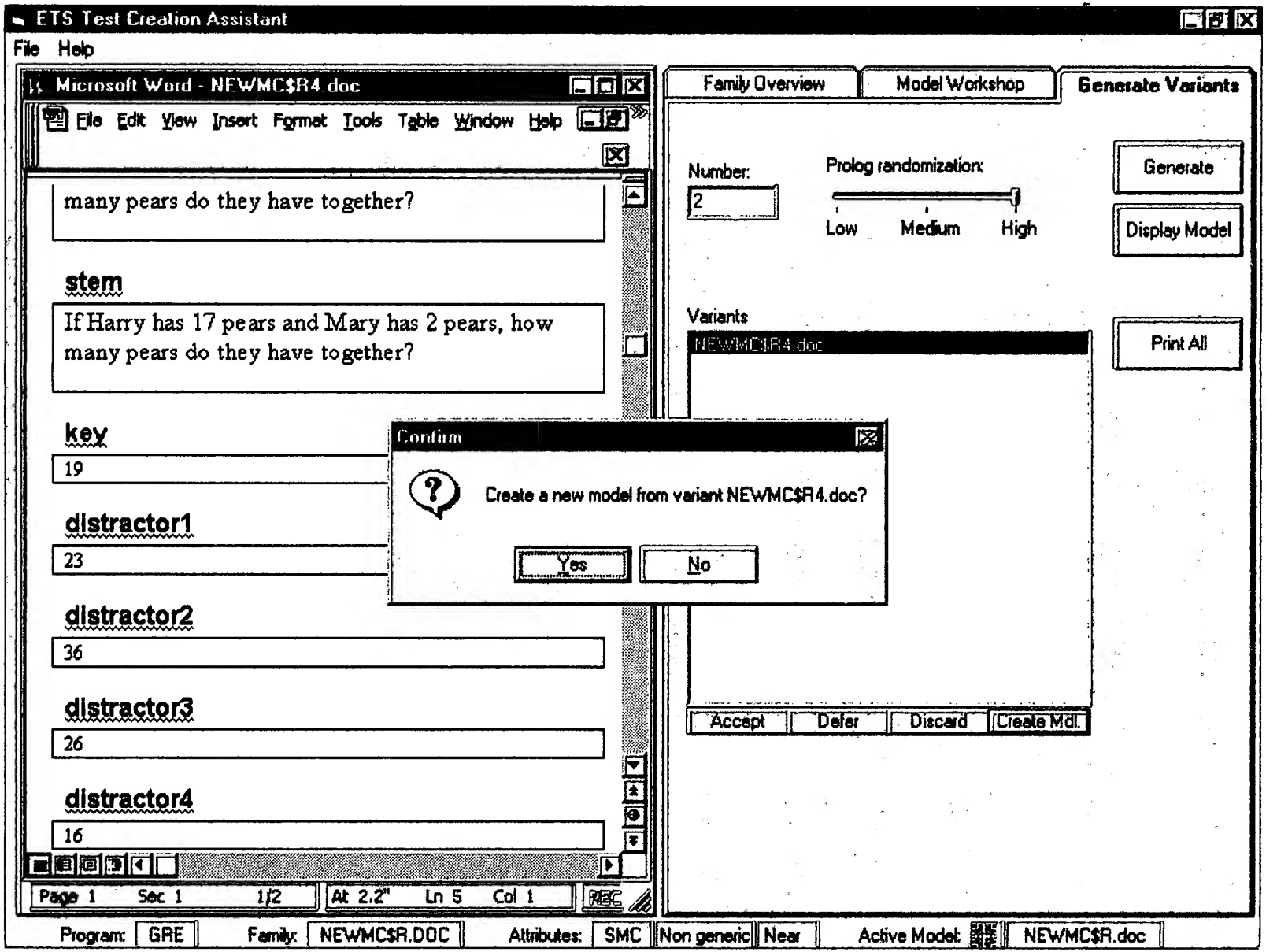

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R4.doc
File Edit View Insert Format Tools Table Window Help
many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
distractor2
36
distractor3
26
distractor4
16
Page 1 Sec 1 1/2 At 2.2" Ln 5 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low Medium High
Generate
Display Model
Variants
NEWMC$R4.doc
Print All
Accept Defer Discard Create Mdl.
Confirm
Create a new model from variant NEWMC$R4.doc?
Yes
No
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$R.doc

FIG. 55

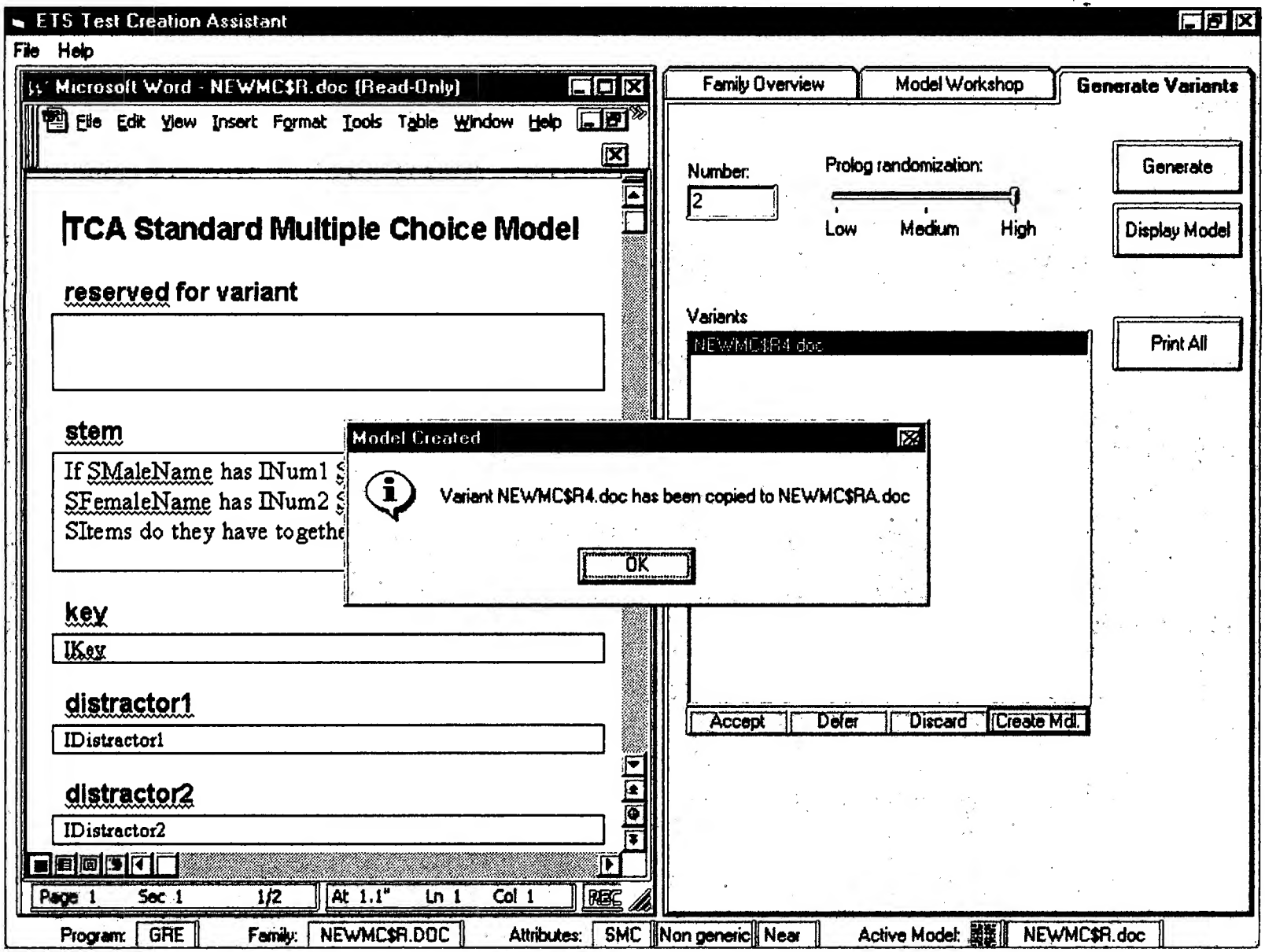

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1
SFemaleName has INum2
SItems do they have togethe
key
IKey
distractor1
IDistractor1
distractor2
IDistractor2
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Model Created
Variant NEWMC$R4.doc has been copied to NEWMC$RA.doc
OK
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$R4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 56

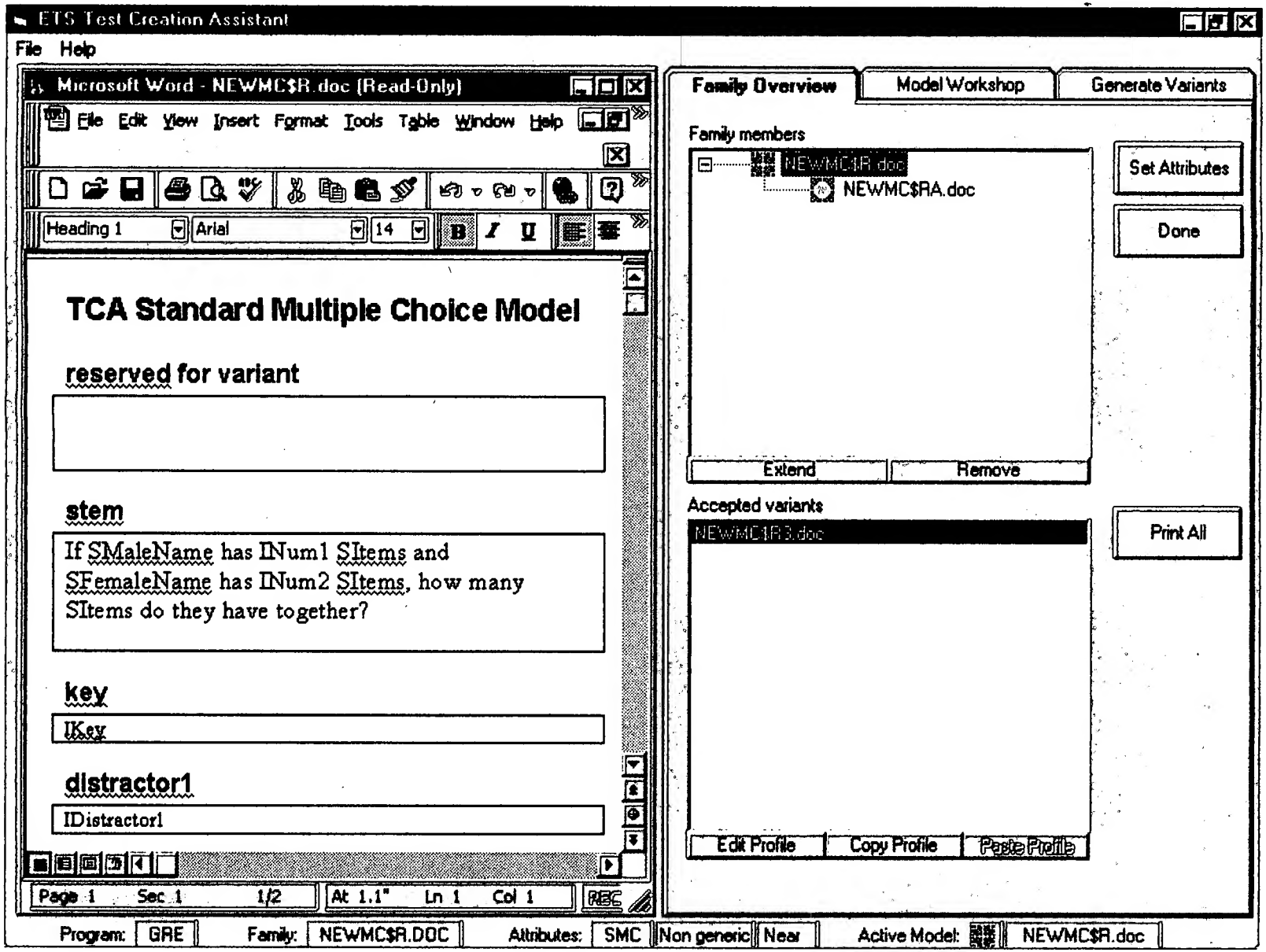

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 57

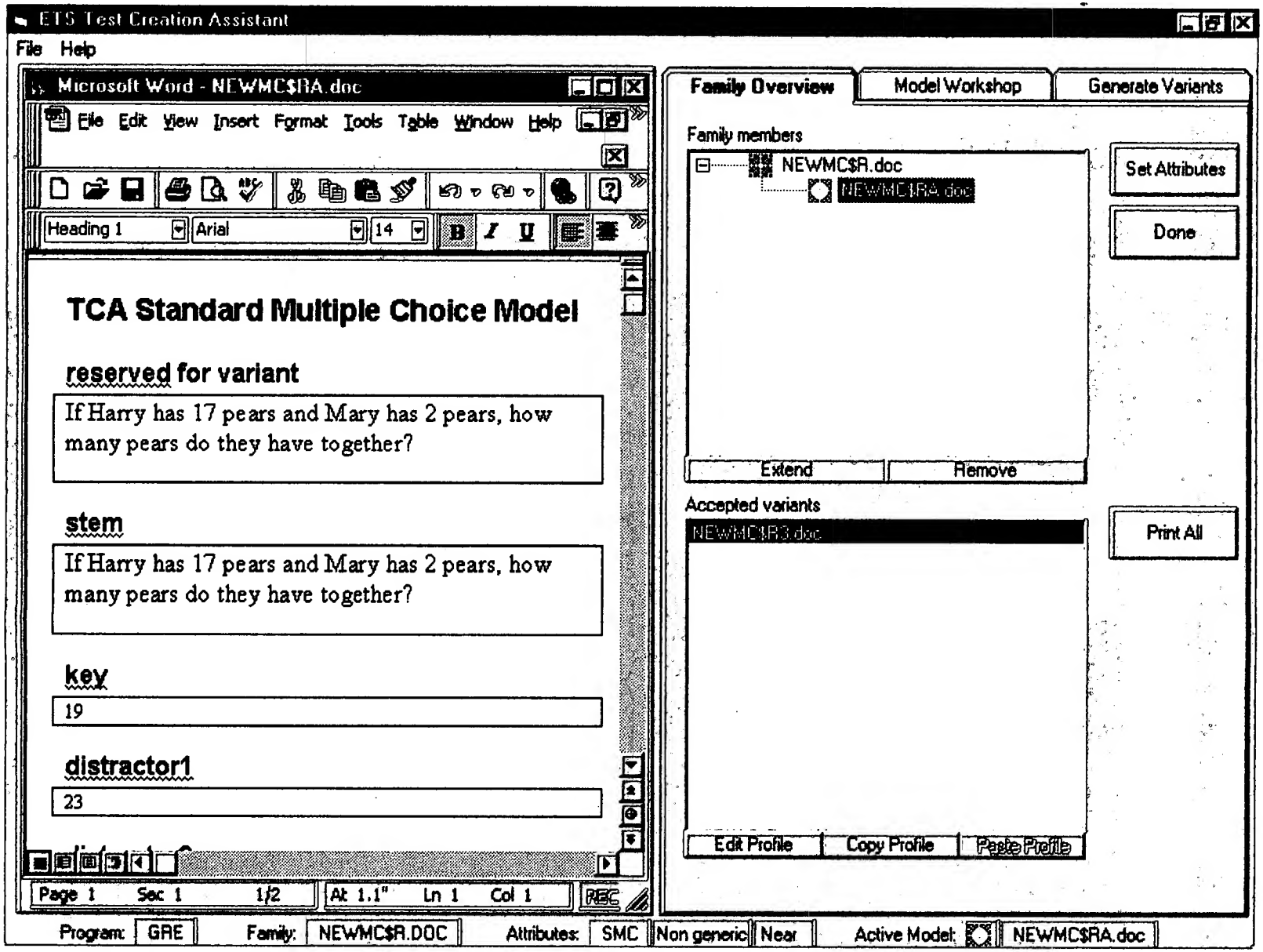

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RA.doc

FIG. 58

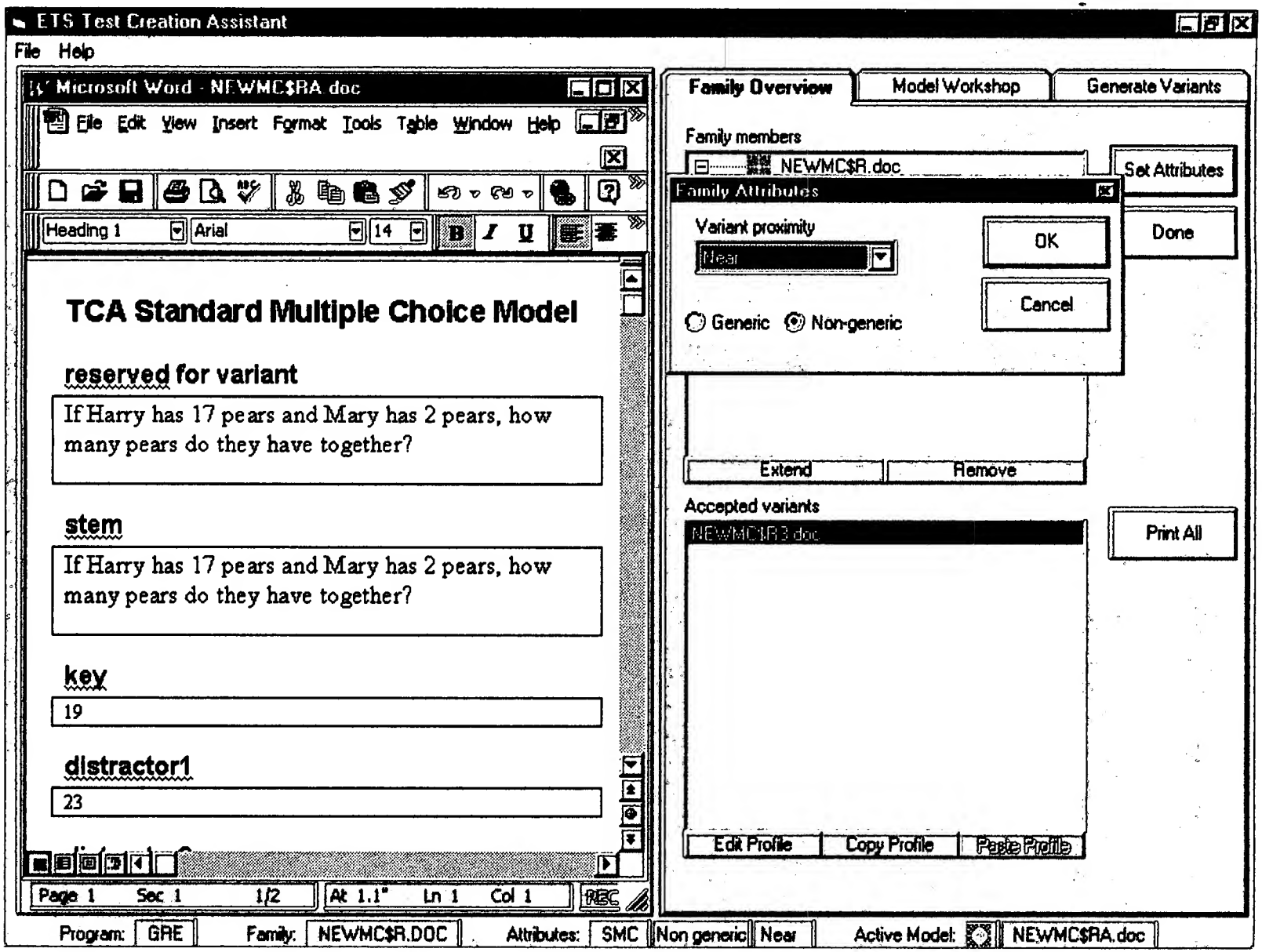

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Family Attributes
Variant proximity
Near
OK
Cancel
Generic
Non-generic
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RA.doc

FIG. 59

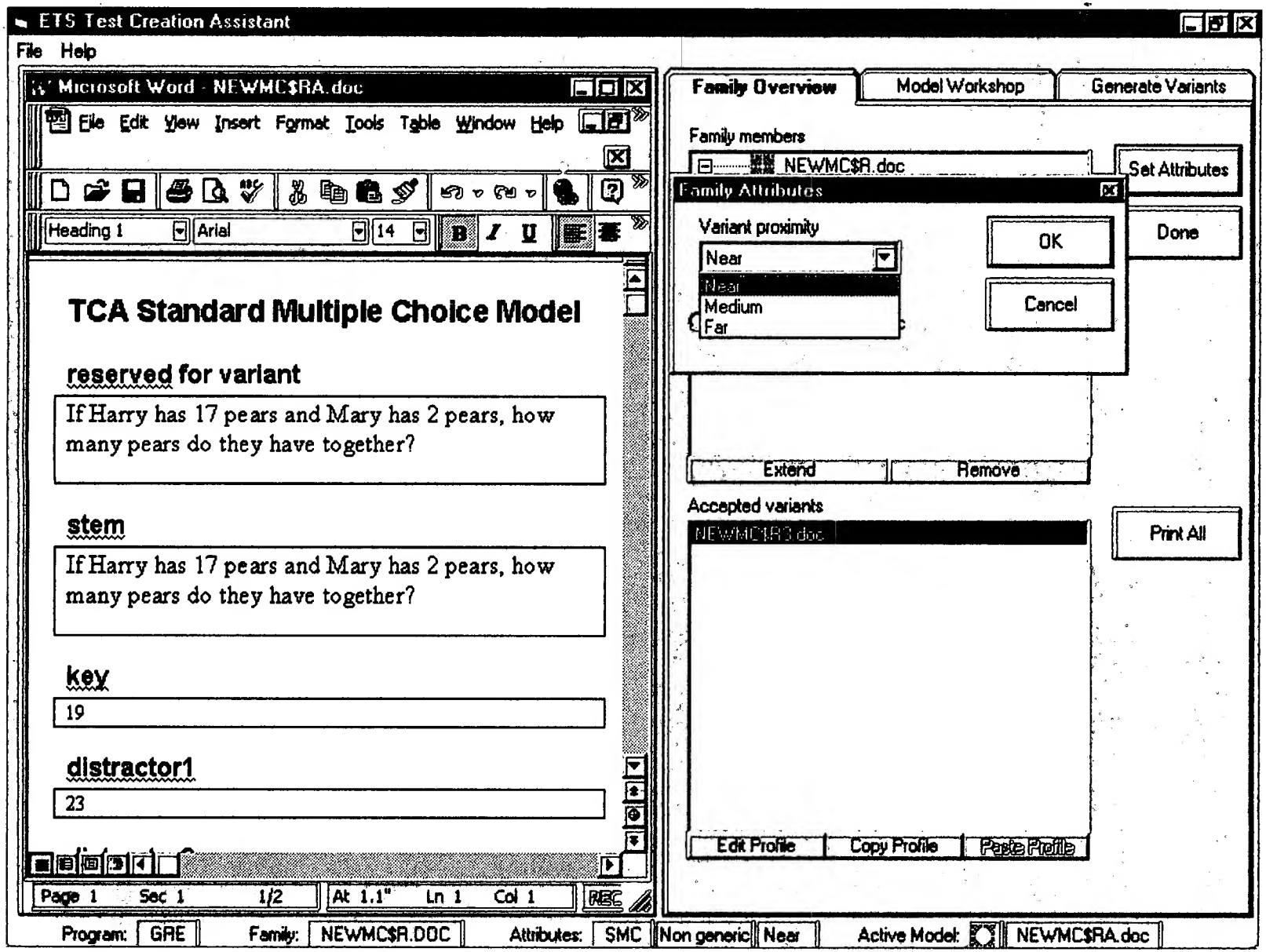

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
Set Attributes
Family Attributes
Variant proximity
Near
Near
Medium
Far
OK
Cancel
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RA.doc

FIG. 60

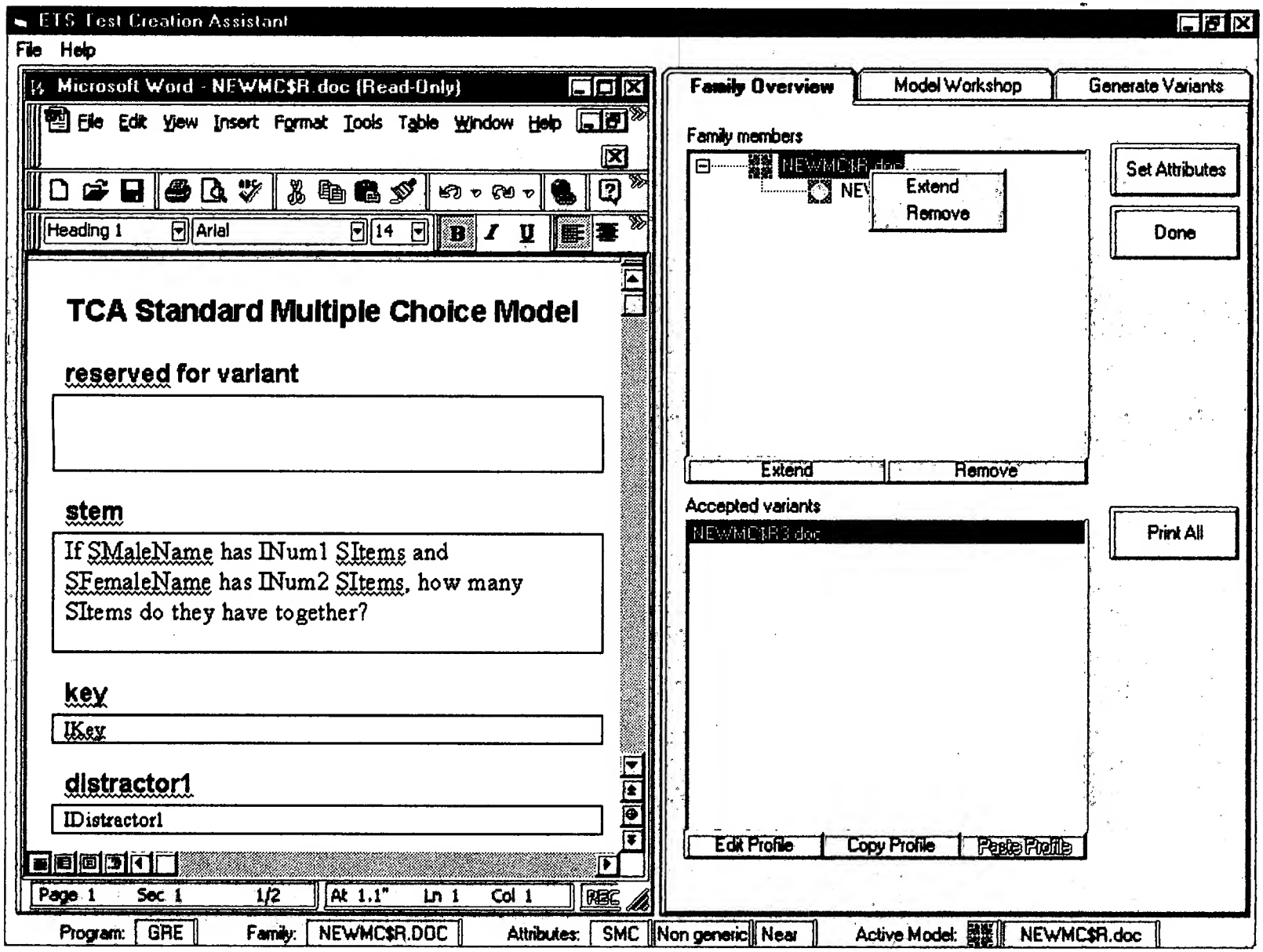

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
Extend
Remove
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 61

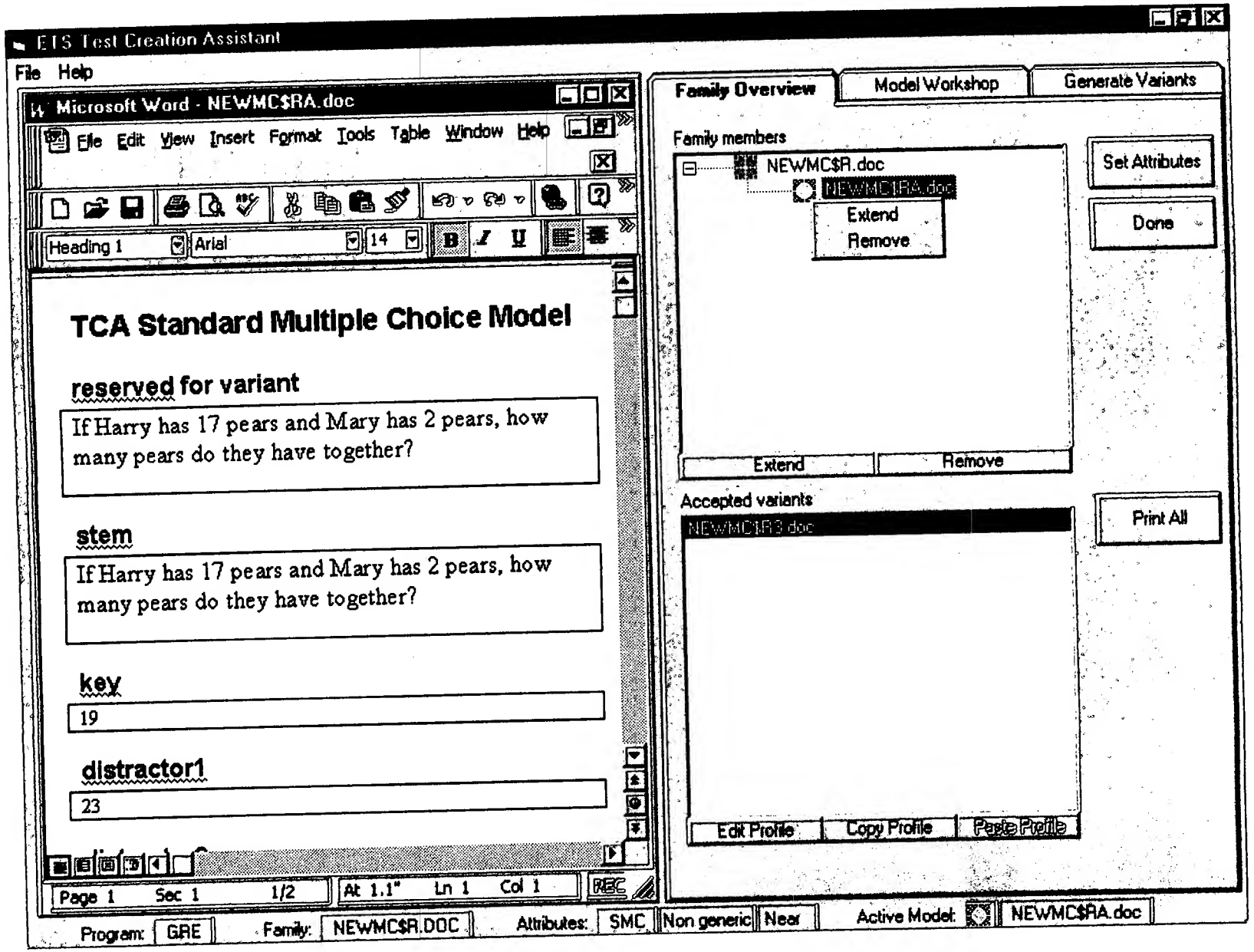

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC1RA.doc
Extend
Remove
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC1R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RA.doc

FIG. 62

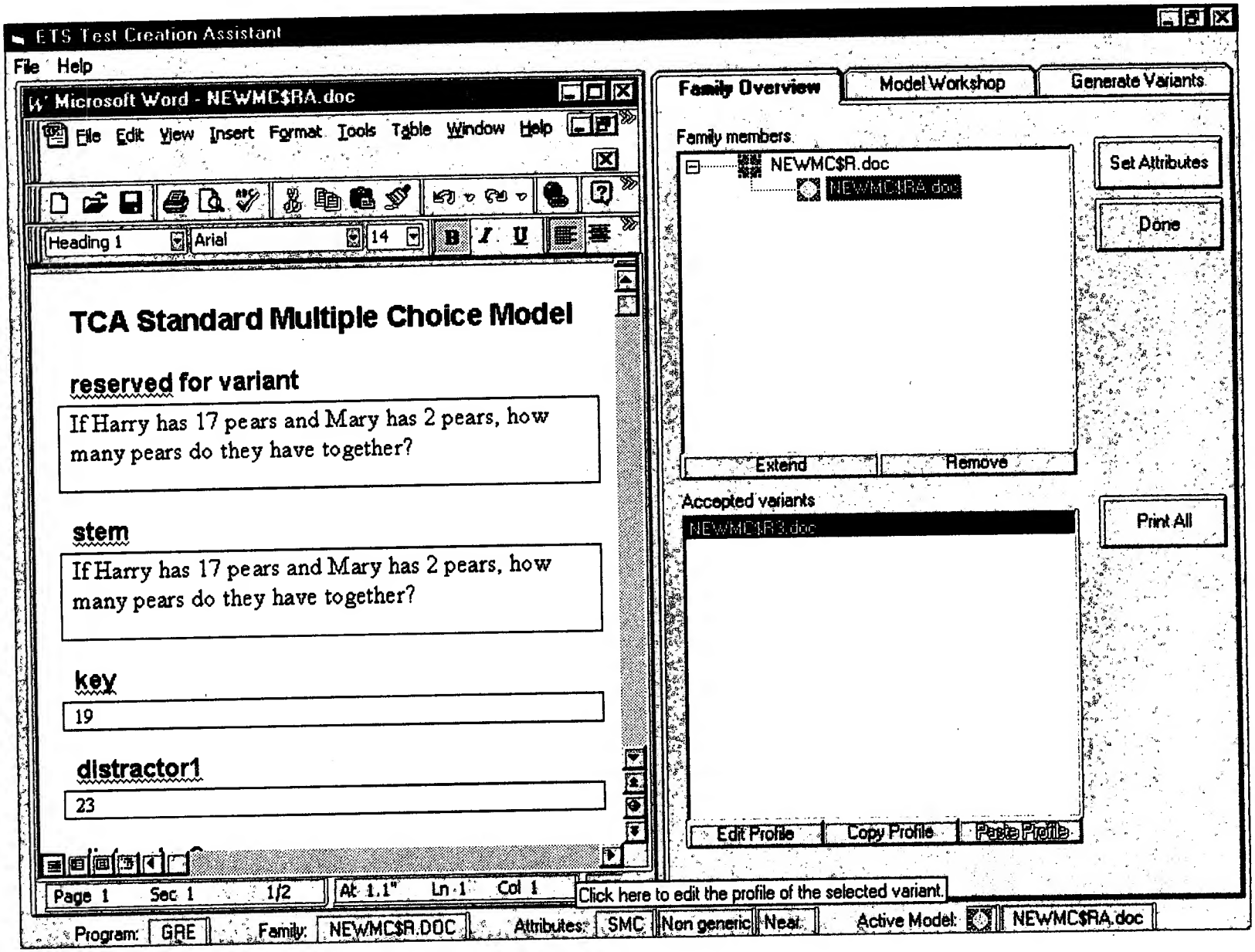

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Click here to edit the profile of the selected variant.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Neat
Active Model:
NEWMC$RA.doc

FIG. 63

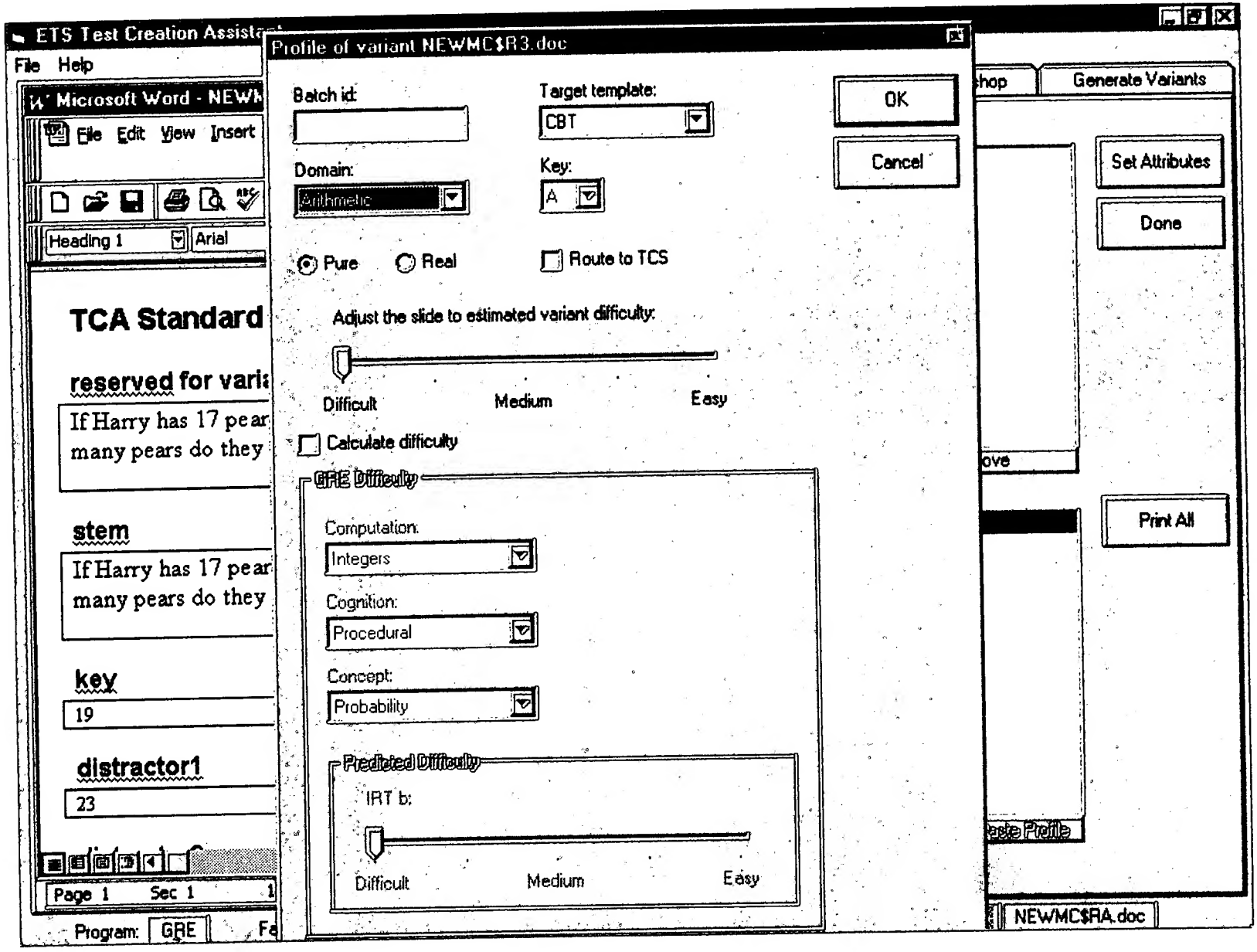

ETS Test Creation Assista
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Key:
A
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Concept:
Probability
Predicted Difficulty
IRT b:
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 64

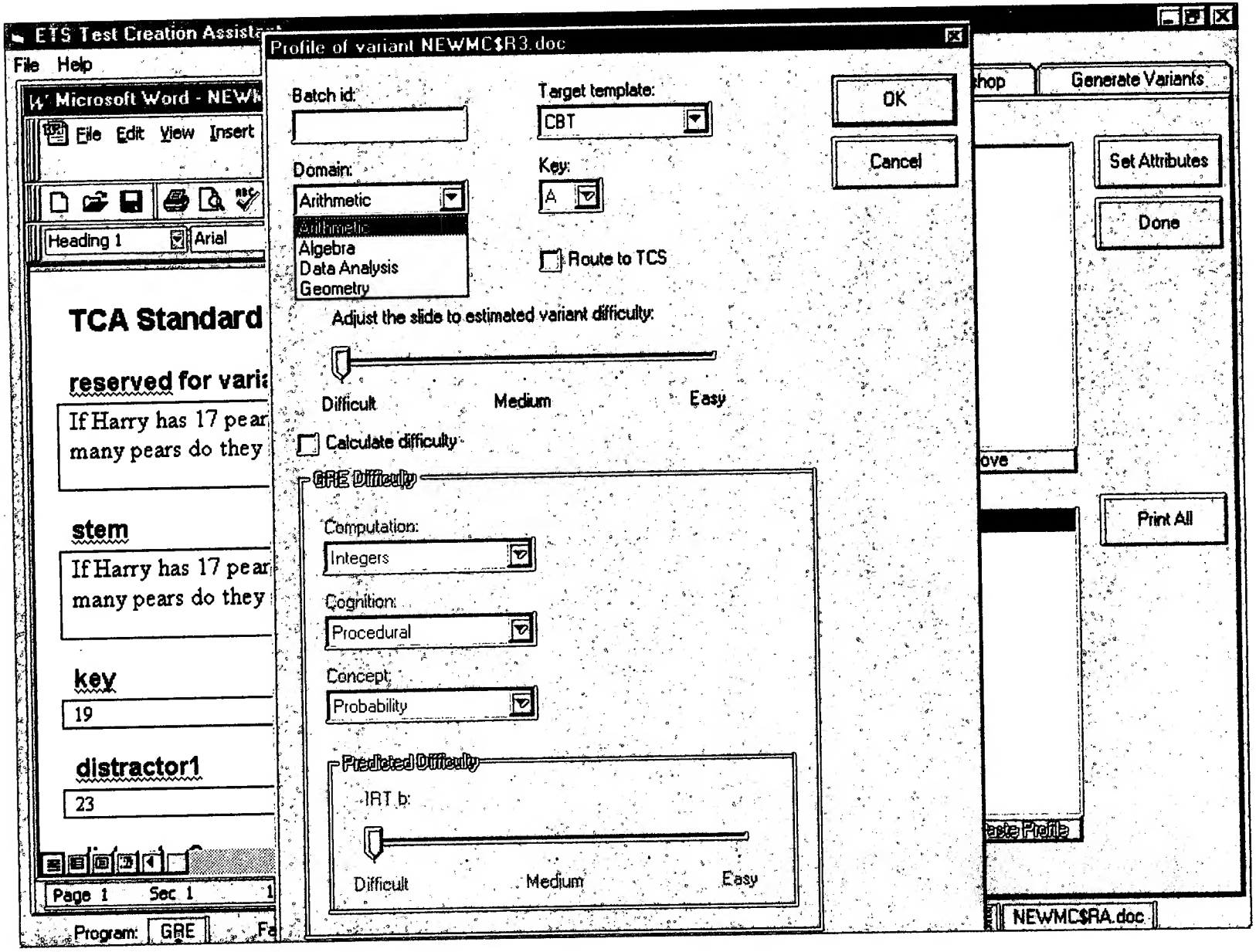

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R3.doc
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for variant
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Algebra
Data Analysis
Geometry
Key:
A
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Concept:
Probability
Predicted Difficulty
IRT b:
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 65

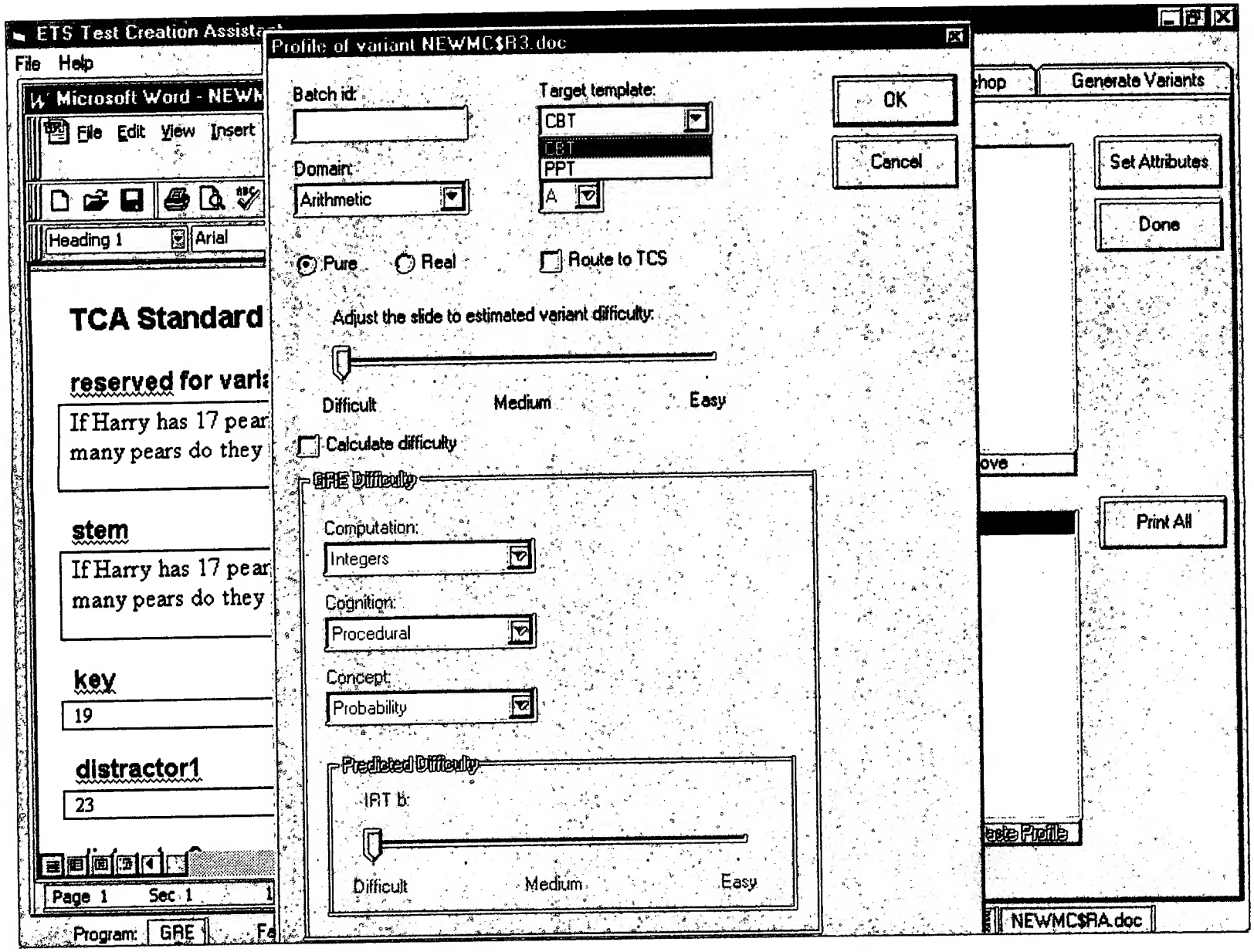

ETS Test Creation Assistant
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
CBT
PPT
A
OK
Cancel
Domain:
Arithmetic
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Concept:
Probability
Predicted Difficulty
IRT b:
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 66

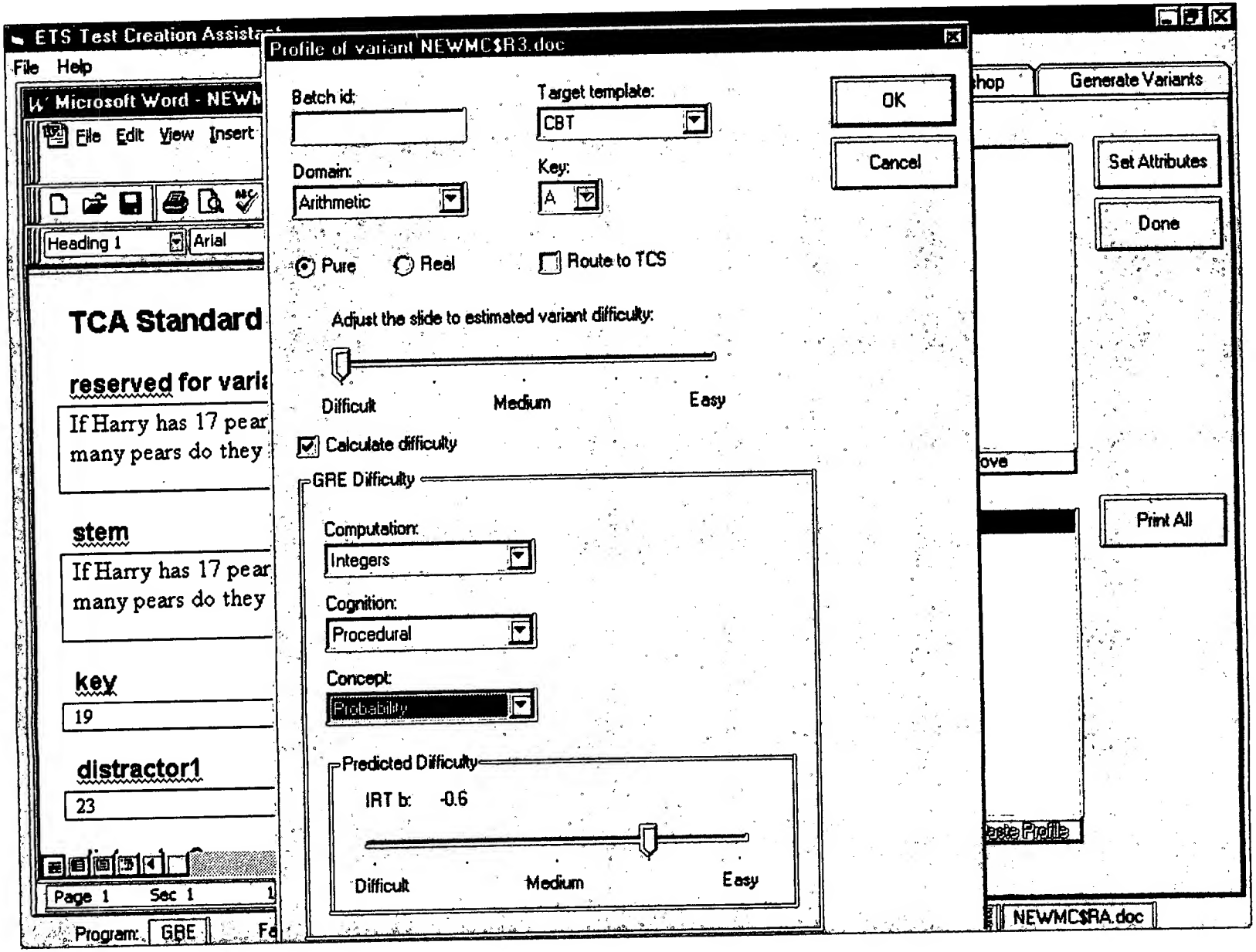

ETS Test Creation Assistant
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Key:
A
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Concept:
Probability
Predicted Difficulty
IRT b: -0.6
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 67

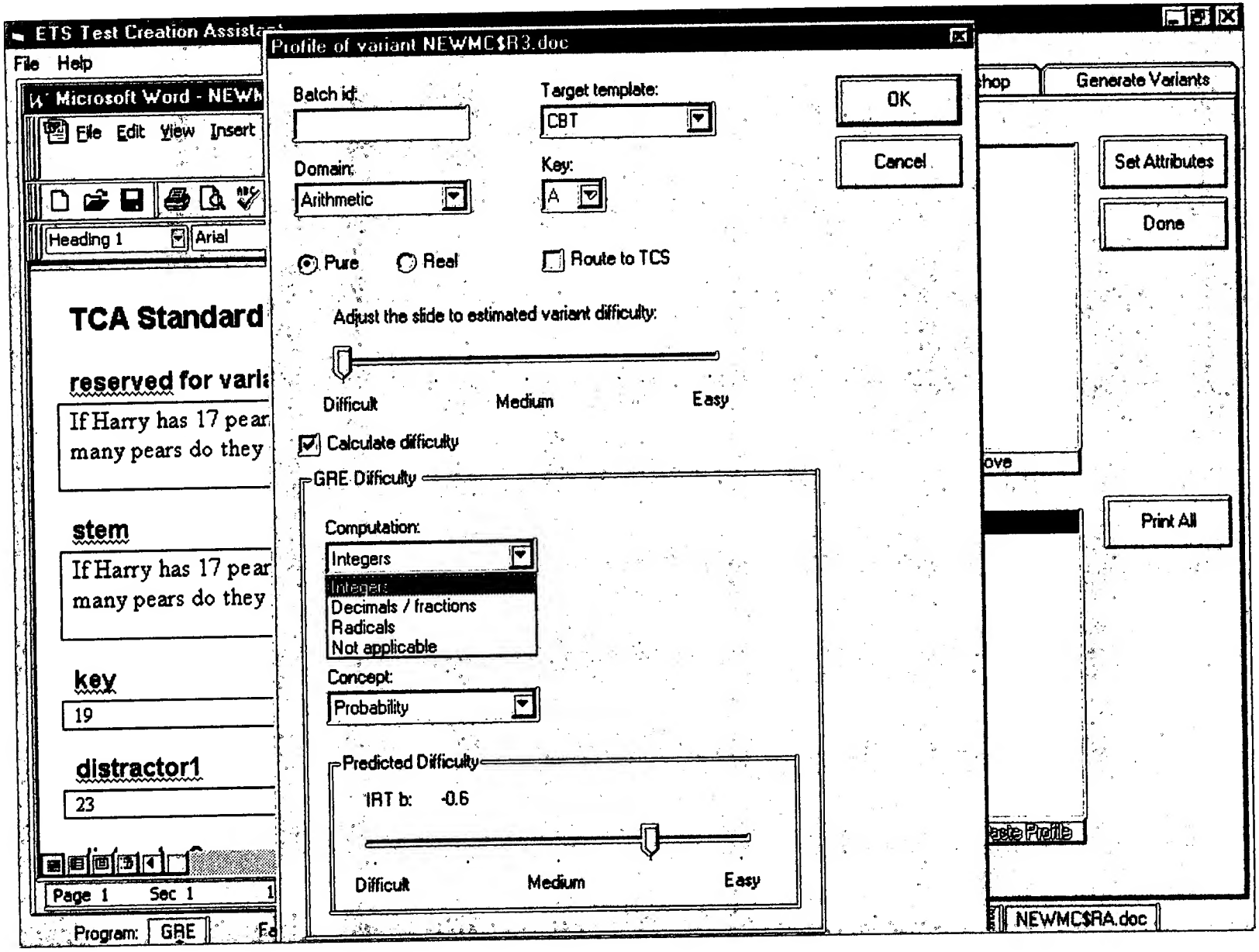

ETS Test Creation Assistant
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Key:
A
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Integers
Decimals / fractions
Radicals
Not applicable
Concept:
Probability
Predicted Difficulty
IRT b: -0.6
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 68

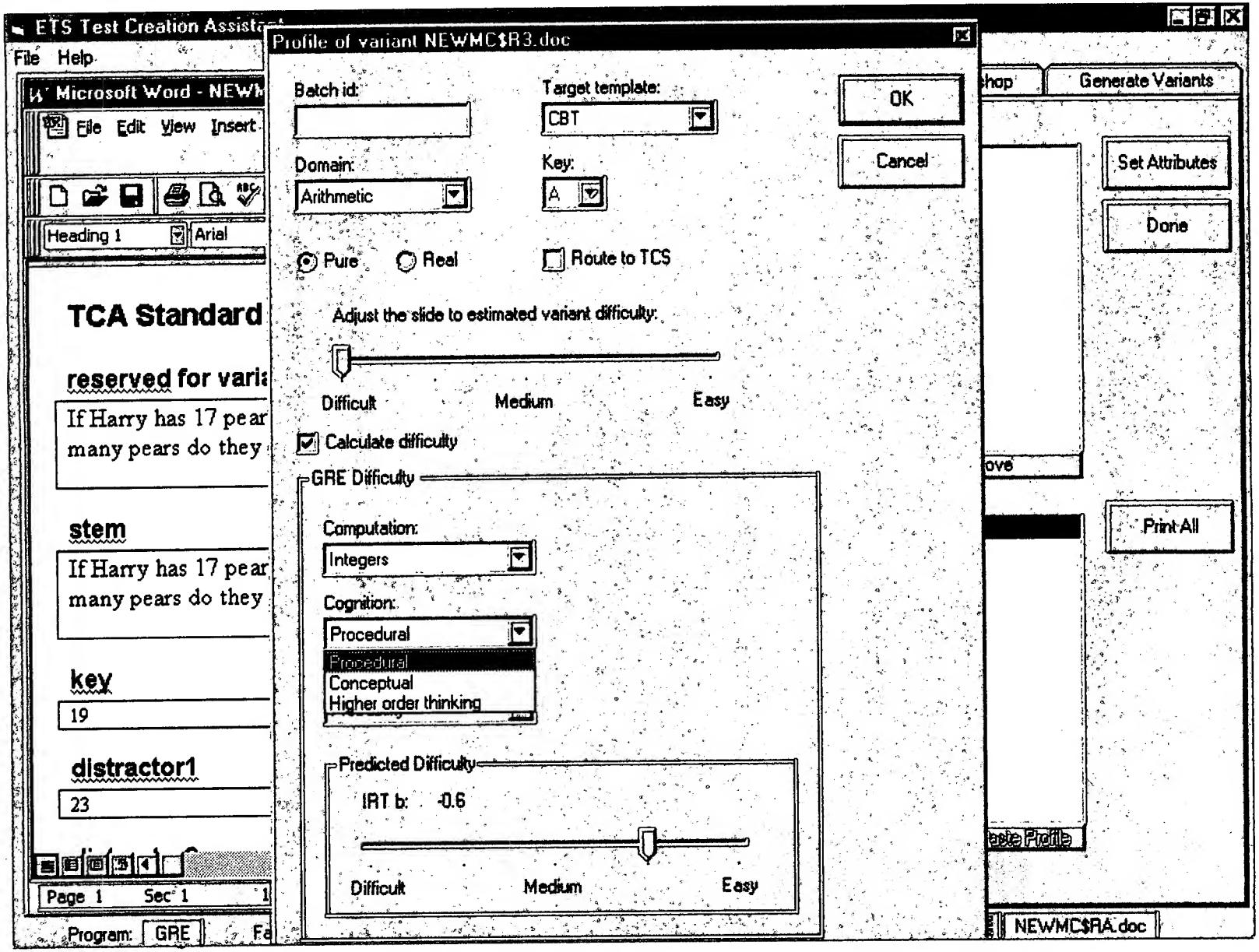

ETS Test Creation Assistant
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Key:
A
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Procedural
Conceptual
Higher order thinking
Predicted Difficulty
IRT b: -0.6
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 69

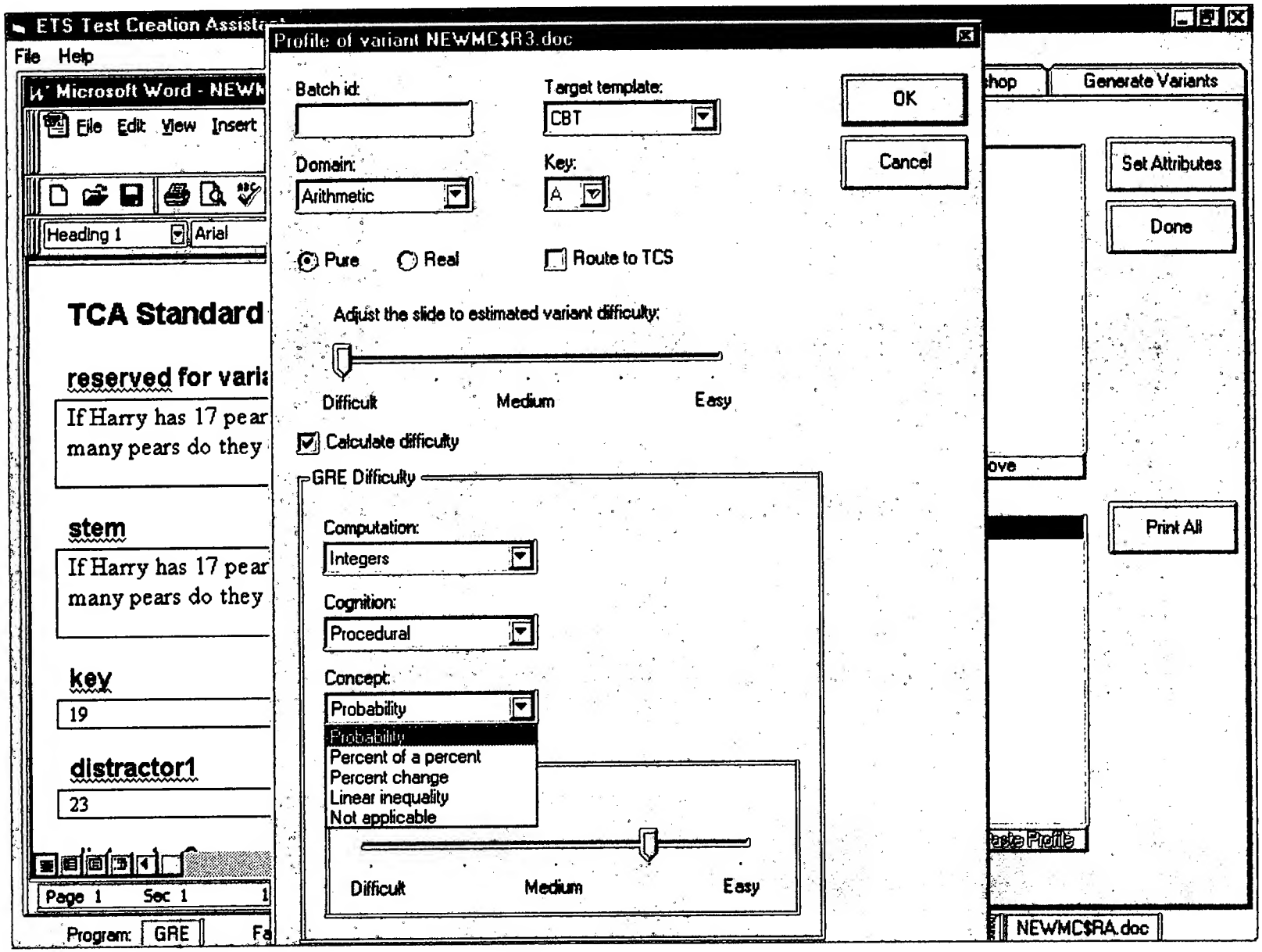

ETS Test Creation Assista
File Help
Microsoft Word - NEWM
File Edit View Insert
Heading 1
Arial
TCA Standard
reserved for varia
If Harry has 17 pear
many pears do they
stem
If Harry has 17 pear
many pears do they
key
19
distractor1
23
Page 1 Sec 1
Program: GRE
Profile of variant NEWMC$R3.doc
Batch id:
Target template:
CBT
OK
Cancel
Domain:
Arithmetic
Key:
A
Pure
Real
Route to TCS
Adjust the slide to estimated variant difficulty:
Difficult
Medium
Easy
Calculate difficulty
GRE Difficulty
Computation:
Integers
Cognition:
Procedural
Concept:
Probability
Probability
Percent of a percent
Percent change
Linear inequality
Not applicable
Difficult
Medium
Easy
Generate Variants
Set Attributes
Done
Print All
NEWMC$RA.doc

FIG. 70

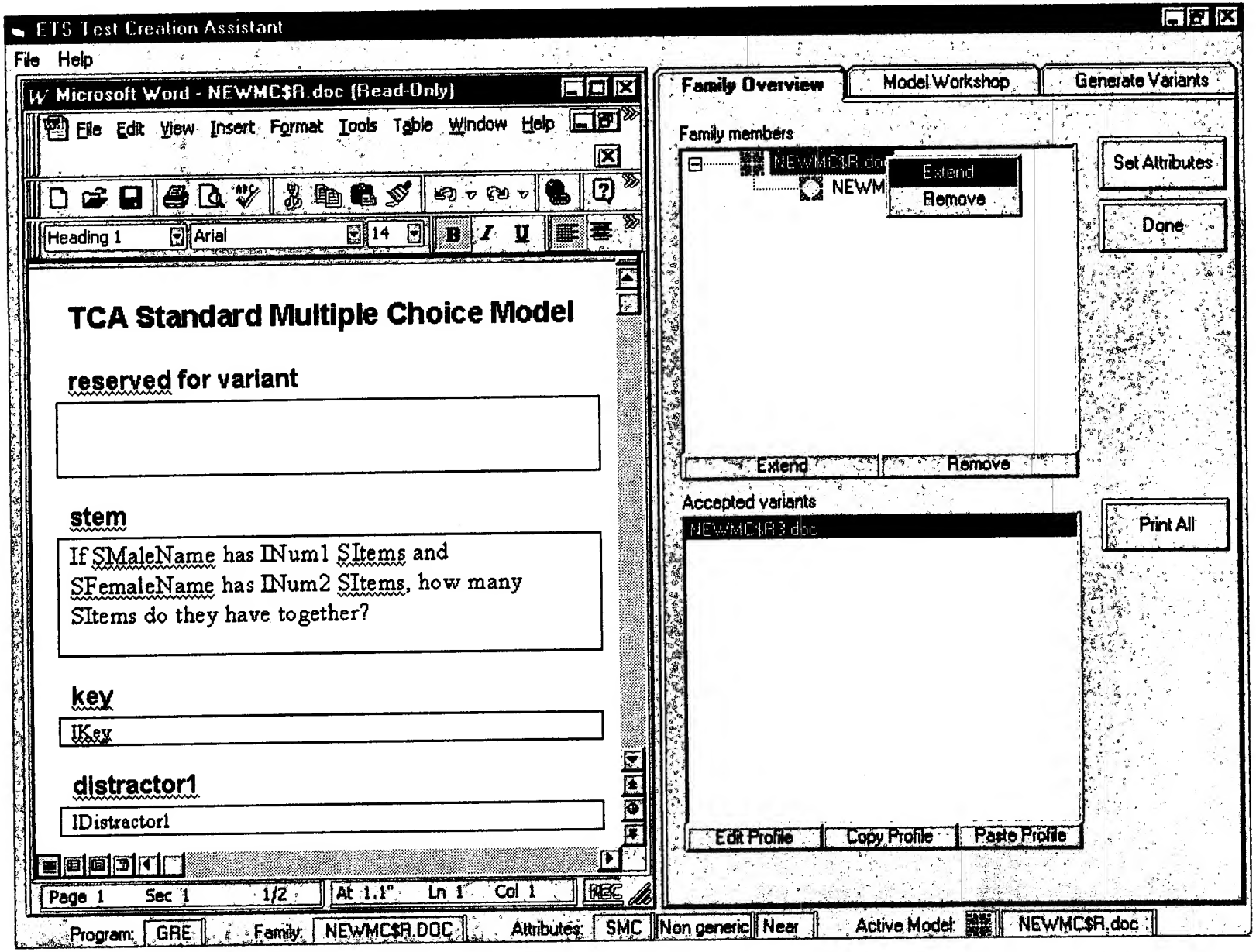

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC1R.doc
NEWM
Extend
Remove
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC1R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 71

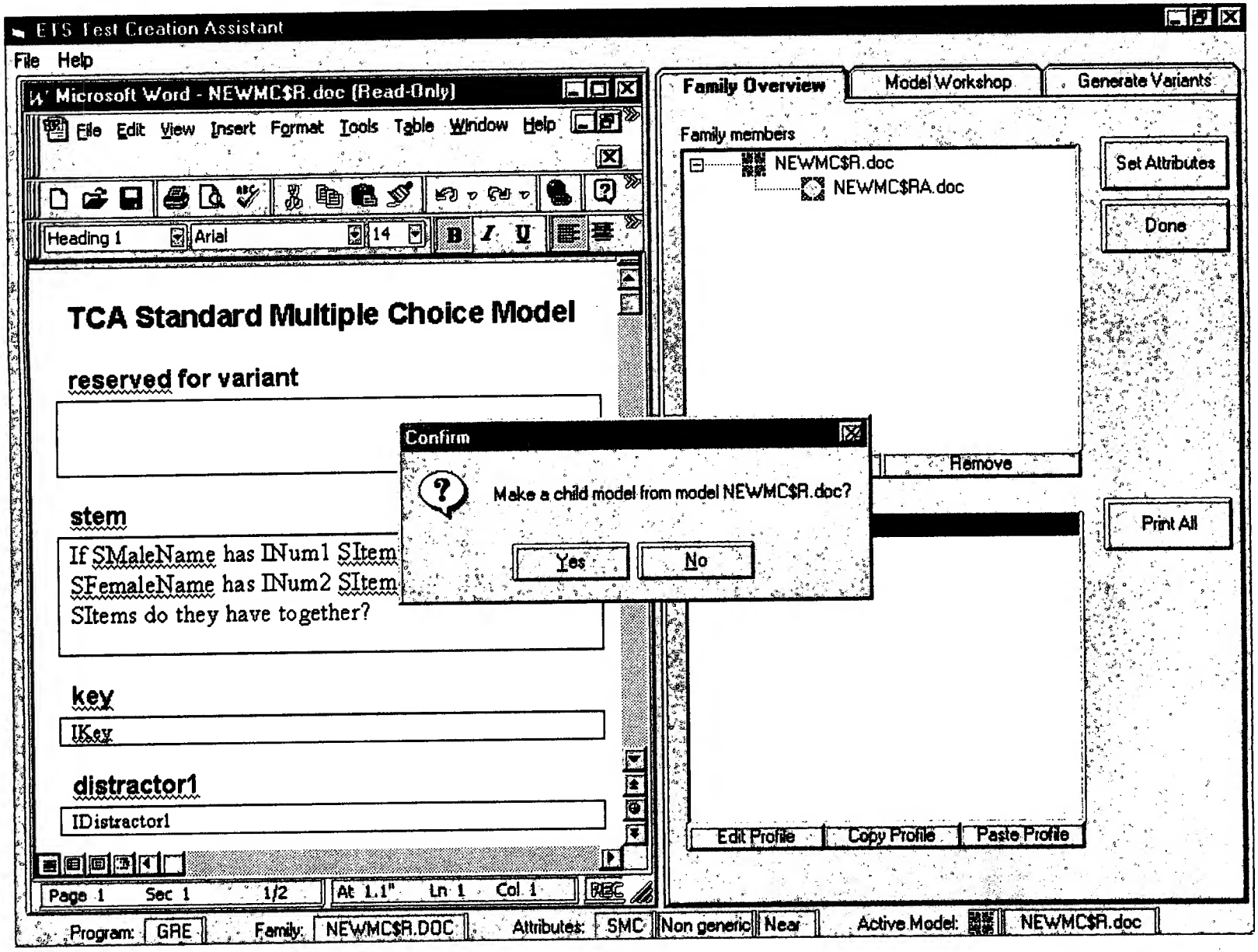

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItem
SFemaleName has INum2 SItem
SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Confirm
Make a child model from model NEWMC$R.doc?
Yes
No
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
Set Attributes
Done
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 72

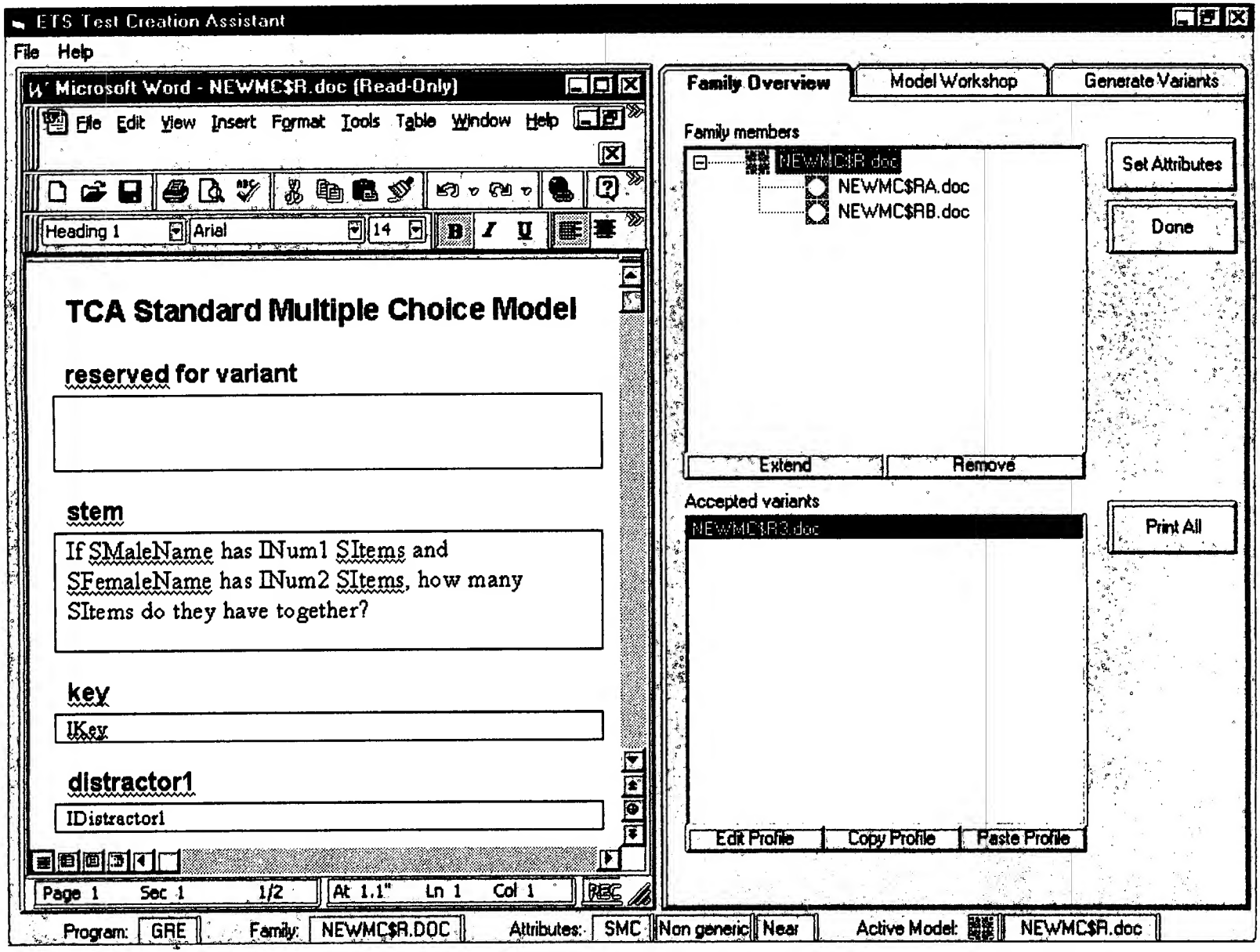

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RB.doc
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 73

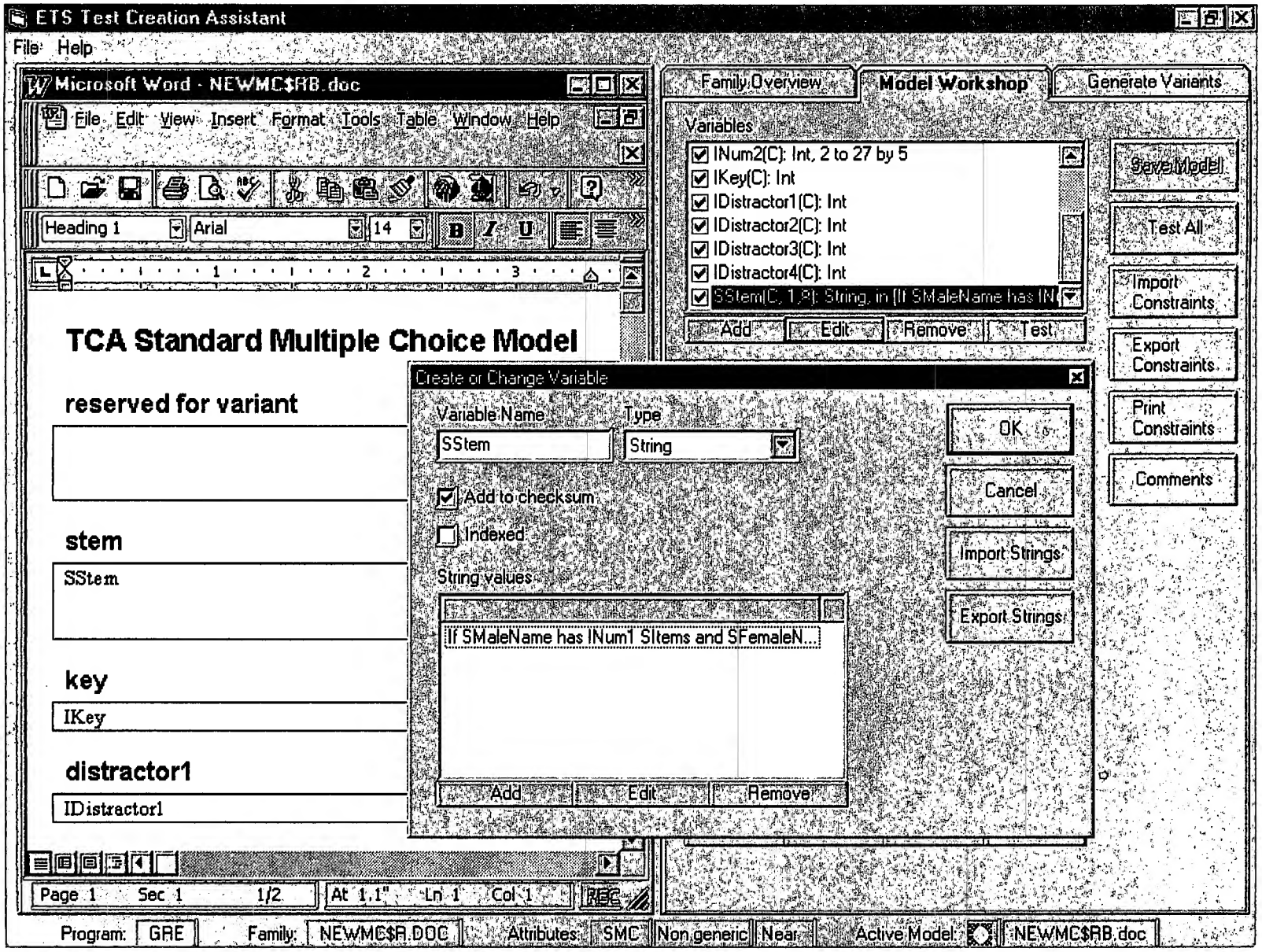

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
SStem
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Variables
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
SStem(C, 1,2): String, in (If SMaleName has IN
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Variable
Variable Name
Type
SStem
String
Add to checksum
Indexed
String values
If SMaleName has INum1 SItems and SFemaleN...
Add
Edit
Remove
OK
Cancel
Import Strings
Export Strings
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model:
NEWMC$RB.doc

FIG. 73A

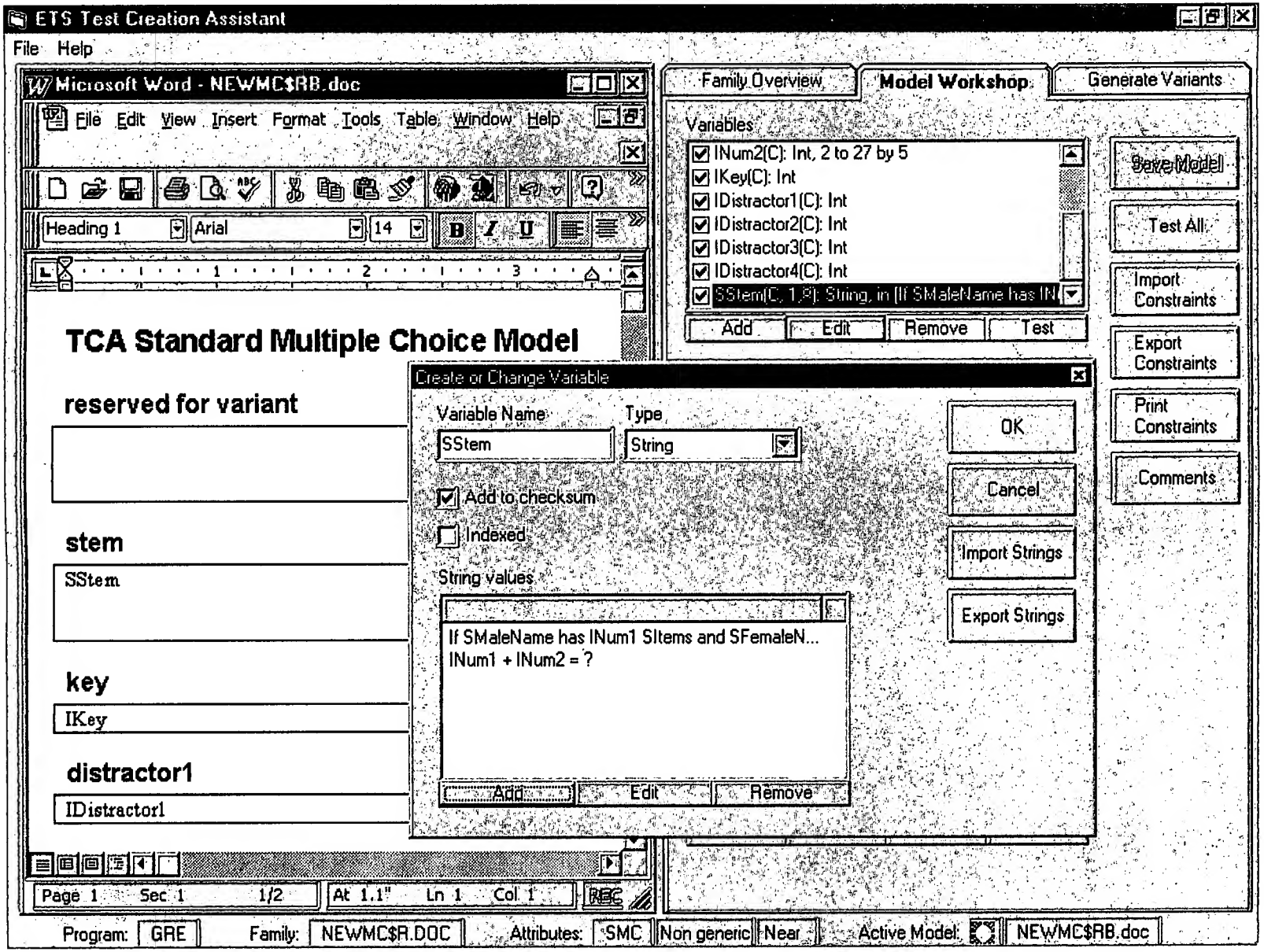

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
SStem
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Variables
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
SStem[C, 1,9]: String, in [If SMaleName has IN
Add
Edit
Remove
Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Create or Change Variable
Variable Name
SStem
Type
String
Add to checksum
Indexed
String values
If SMaleName has INum1 SItems and SFemaleN...
INum1 + INum2 = ?
Add
Edit
Remove
OK
Cancel
Import Strings
Export Strings
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RB.doc

FIG. 73B

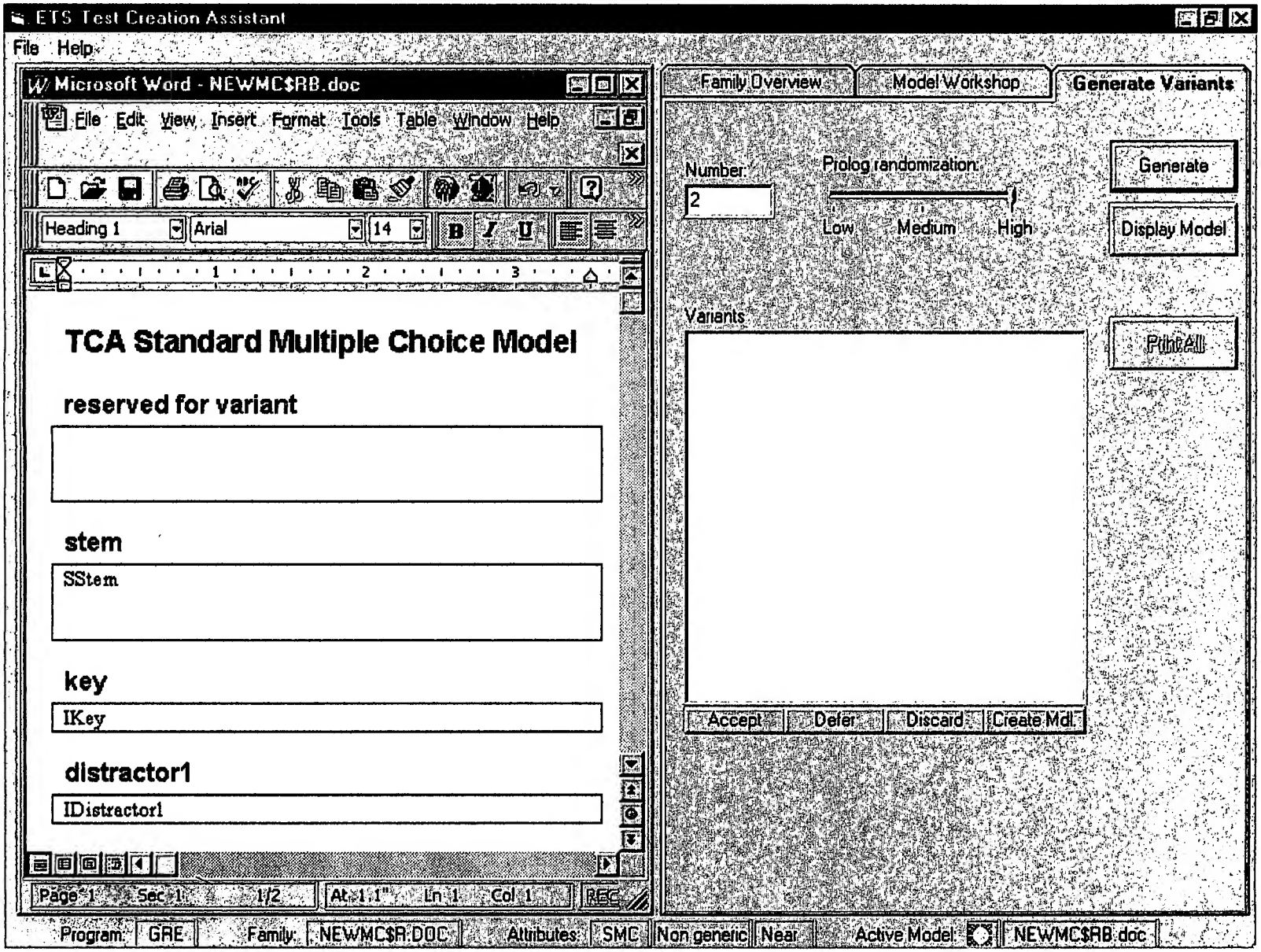

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
SStem
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2 At 1.1" Ln 1 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
Print All
Accept
Defer
Discard
Create Mdl
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RB.doc

FIG. 73C

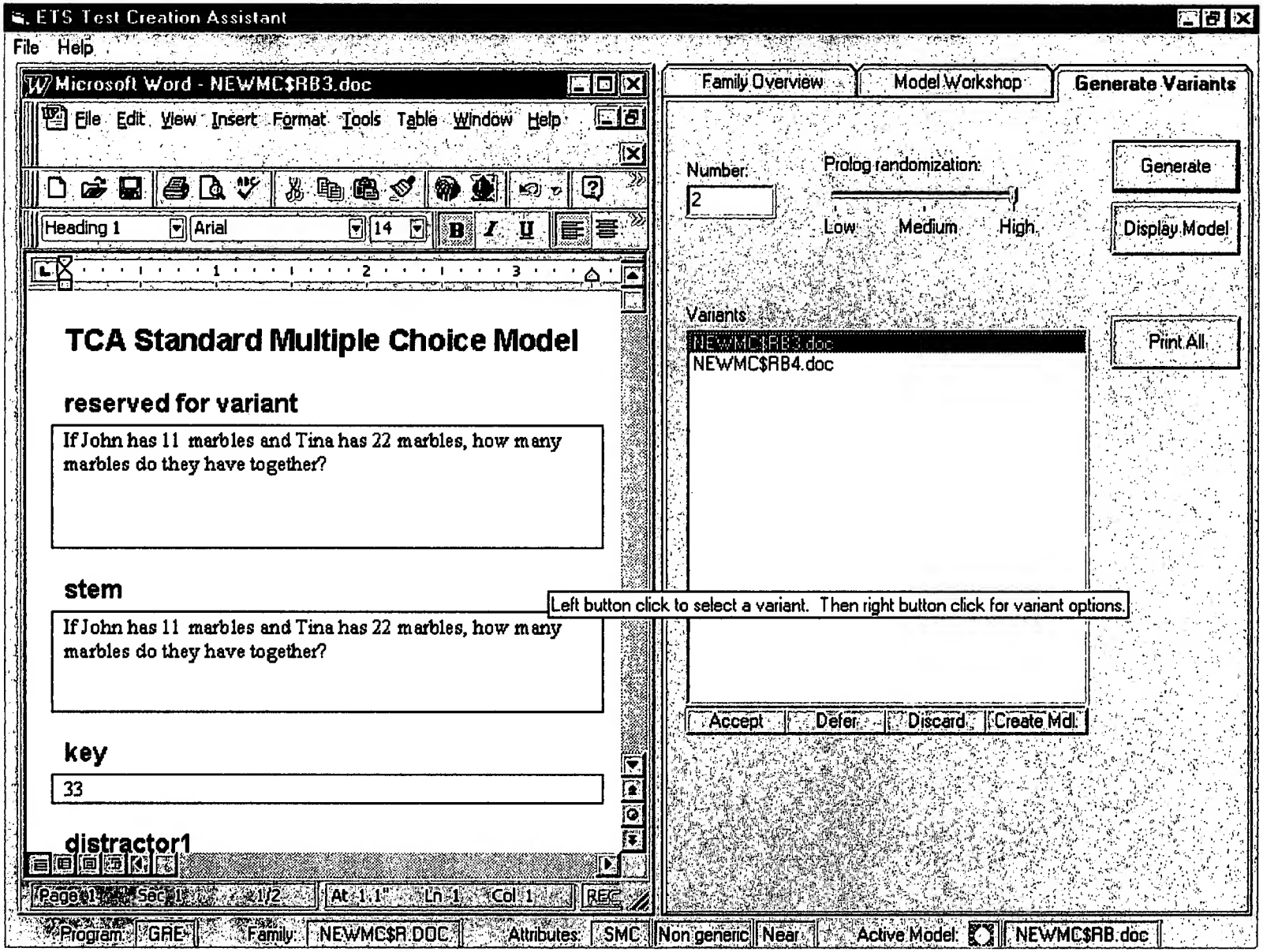

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB3.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If John has 11 marbles and Tina has 22 marbles, how many marbles do they have together?
stem
If John has 11 marbles and Tina has 22 marbles, how many marbles do they have together?
key
33
distractor1
Page 1 Sec 1 1/2 At 1.1" Ln 1 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$RB3.doc
NEWMC$RB4.doc
Print All
Left button click to select a variant. Then right button click for variant options.
Accept
Defer
Discard
Create Mdl.
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RB.doc

FIG. 73D

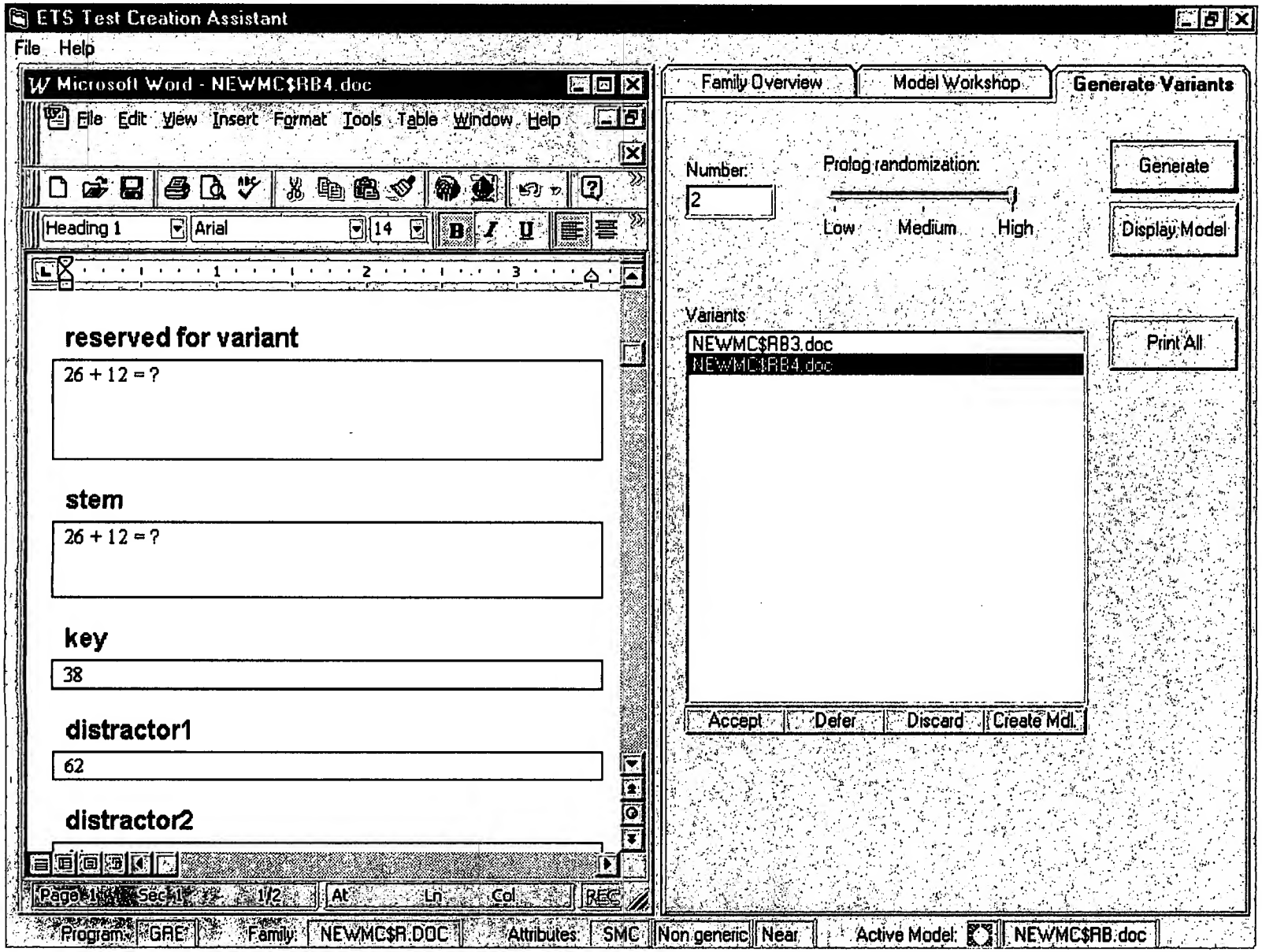

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB4.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
reserved for variant
26 + 12 = ?
stem
26 + 12 = ?
key
38
distractor1
62
distractor2
Page 1 Sec 1 1/2 At Ln Col REC
Family Overview
Model Workshop
Generate Variants
Number:
2
Prolog randomization:
Low
Medium
High
Generate
Display Model
Variants
NEWMC$RB3.doc
NEWMC$RB4.doc
Print All
Accept
Defer
Discard
Create Mdl.
Program:
GRE
Family:
NEWMC$R.DOC
Attributes:
SMC
Non generic
Near
Active Model:
NEWMC$RB.doc

FIG. 73E

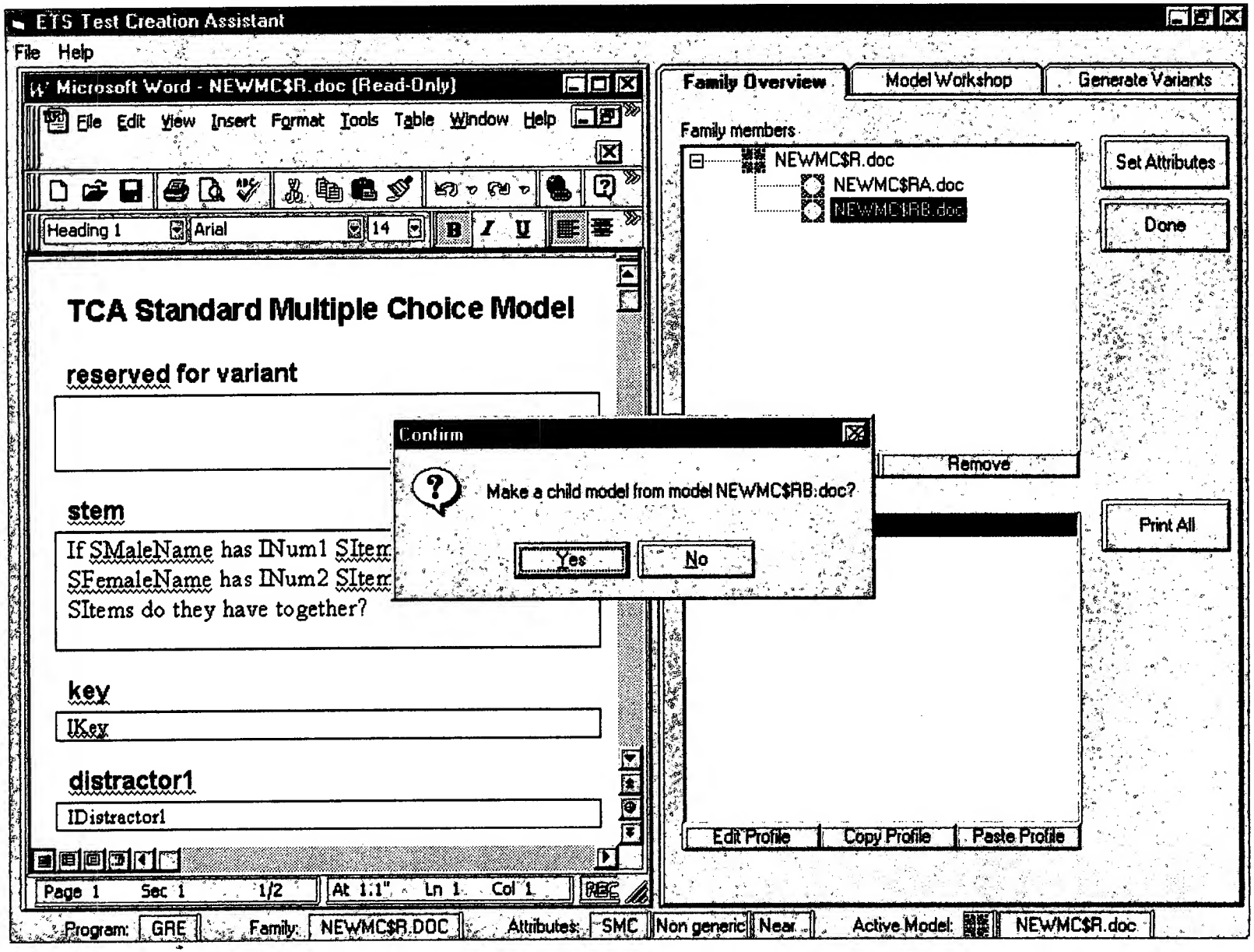

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItem
SFemaleName has INum2 SItem
SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RB.doc
Set Attributes
Done
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
Confirm
Make a child model from model NEWMC$RB.doc?
Yes
No
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 74

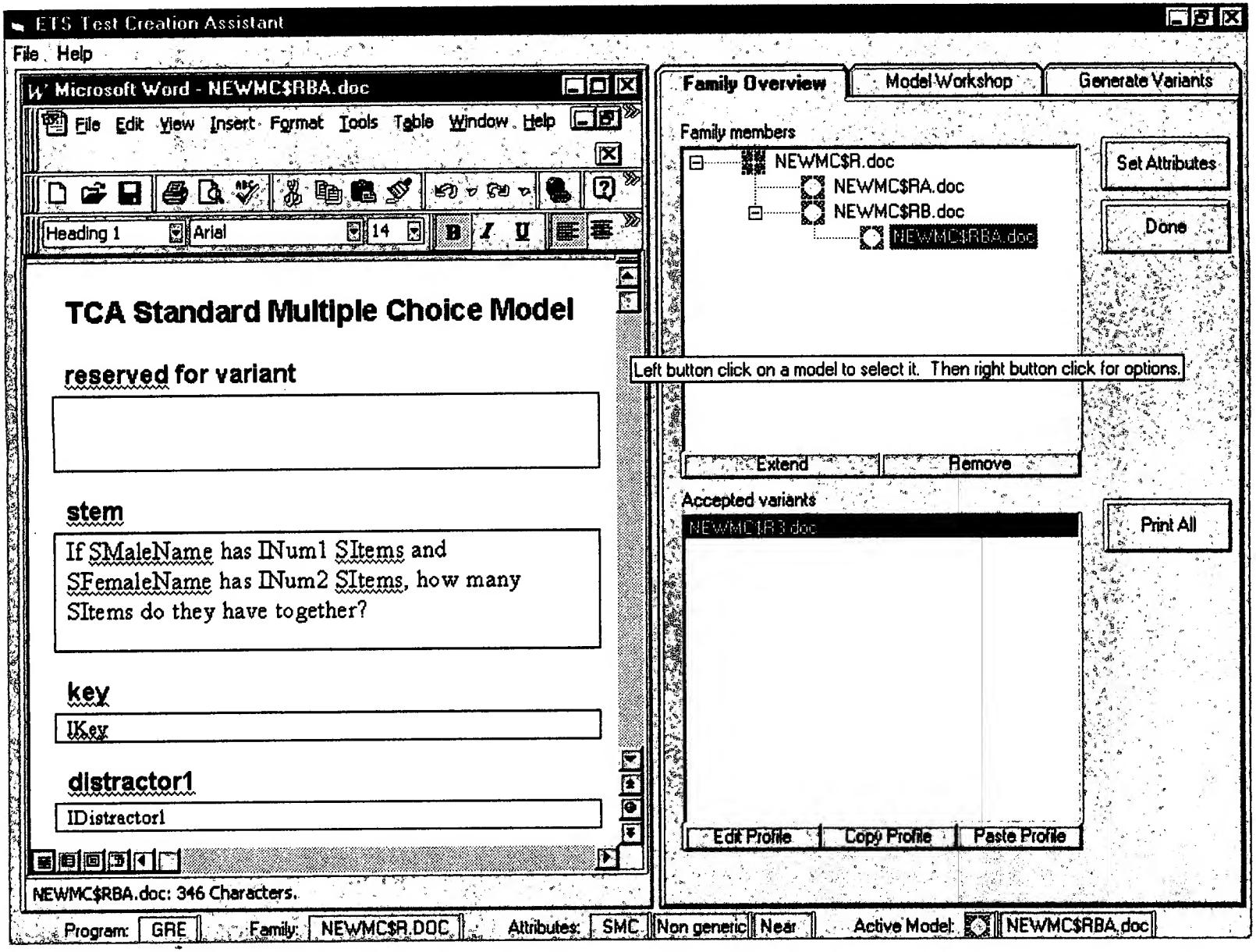

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RBA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
NEWMC$RBA.doc: 346 Characters.
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RB.doc
NEWMC$RBA.doc
Set Attributes
Done
Left button click on a model to select it. Then right button click for options.
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RBA.doc

FIG. 75

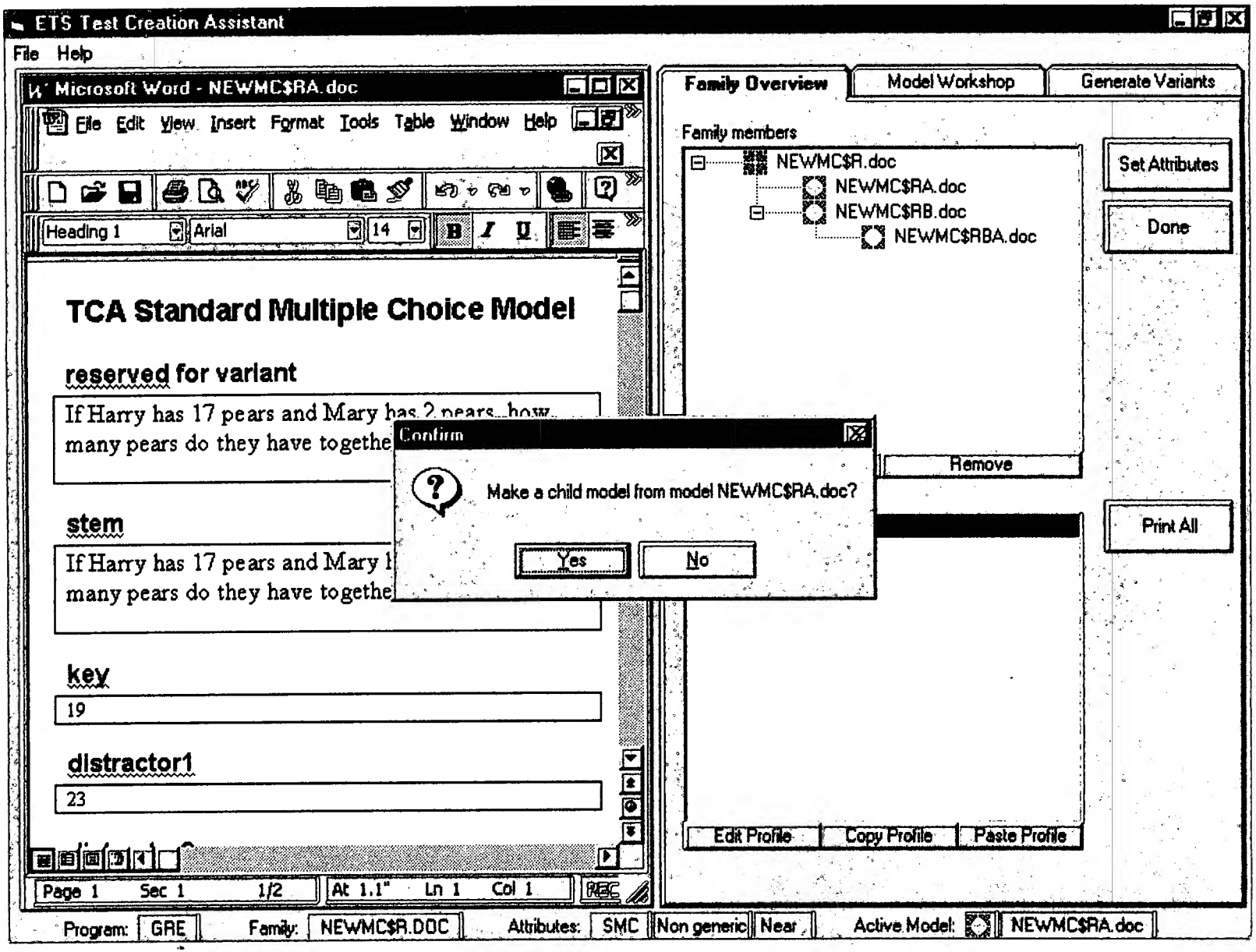

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears...how
many pears do they have togethe
stem
If Harry has 17 pears and Mary h
many pears do they have togethe
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RB.doc
NEWMC$RBA.doc
Set Attributes
Done
Remove
Print All
Edit Profile
Copy Profile
Paste Profile
Confirm
Make a child model from model NEWMC$RA.doc?
Yes
No
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RA.doc

FIG. 76

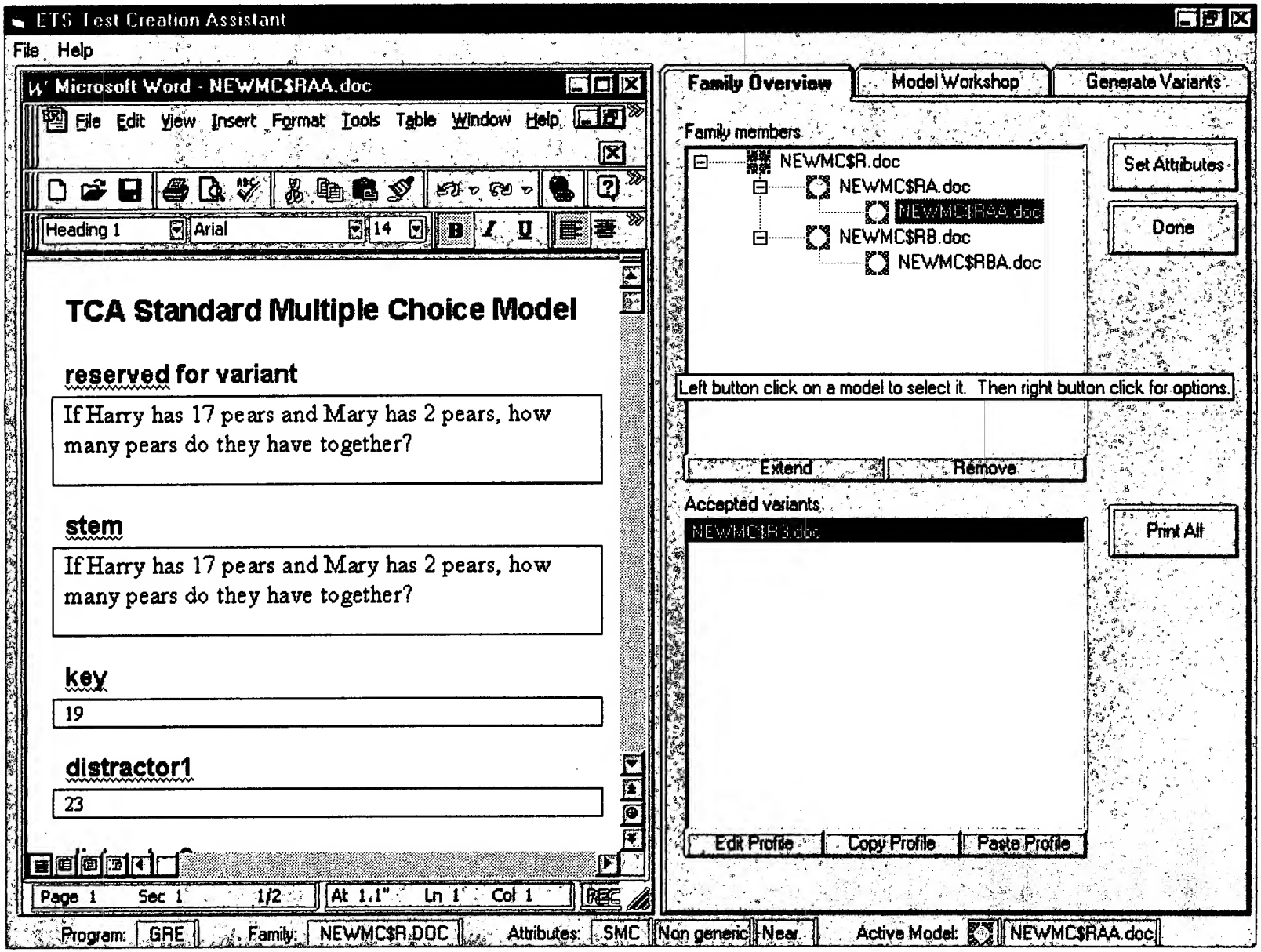

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RAA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RAA.doc
NEWMC$RB.doc
NEWMC$RBA.doc
Set Attributes
Done
Left button click on a model to select it. Then right button click for options.
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$RAA.doc

FIG. 77

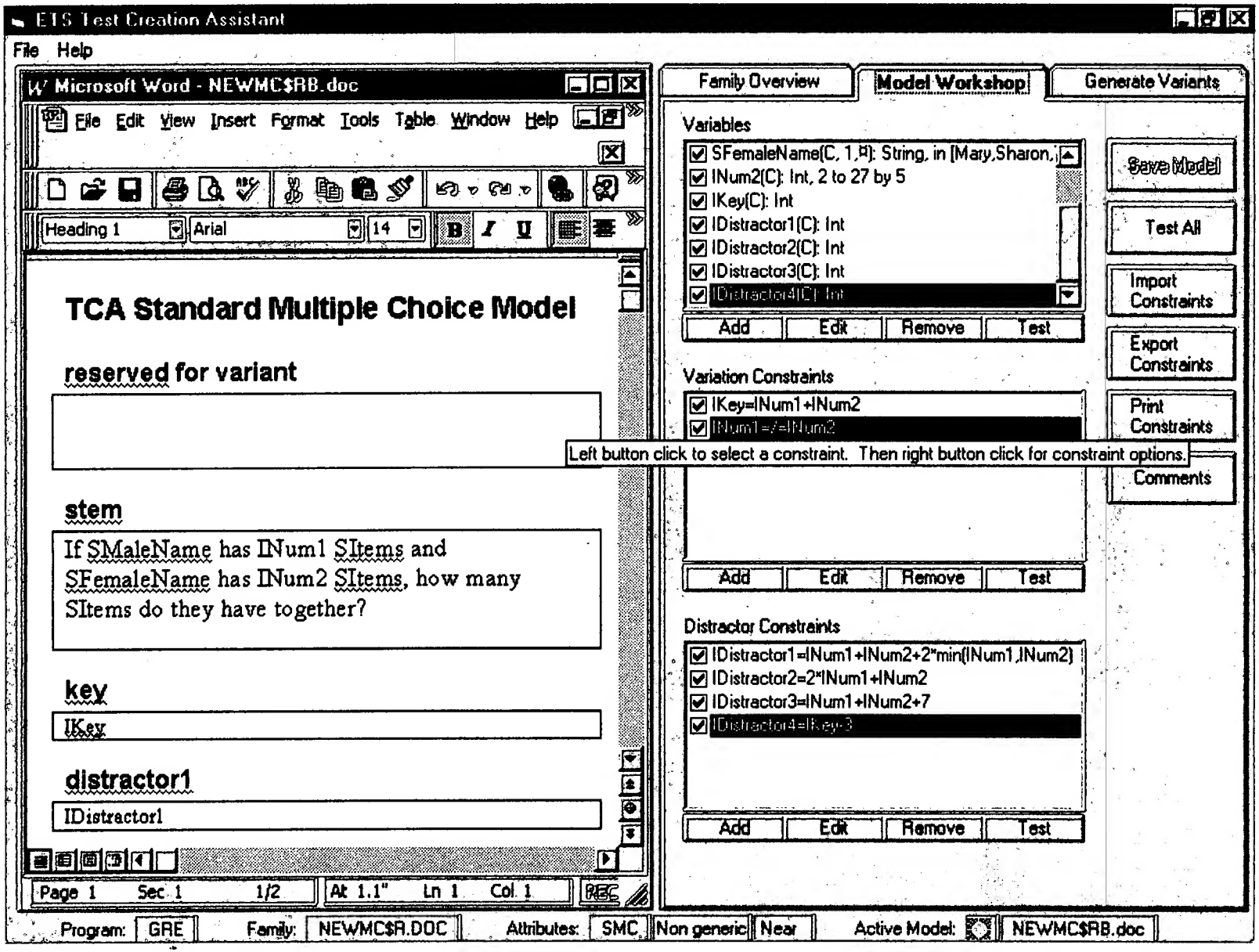

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RB.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Variation Constraints
IKey=INum1+INum2
INum1<>INum2
Left button click to select a constraint. Then right button click for constraint options.
Add Edit Remove Test
Distractor Constraints
IDistractor1=INum1+INum2+2*min(INum1,INum2)
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+7
IDistractor4=IKey-3
Add Edit Remove Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$RB.doc

FIG. 78

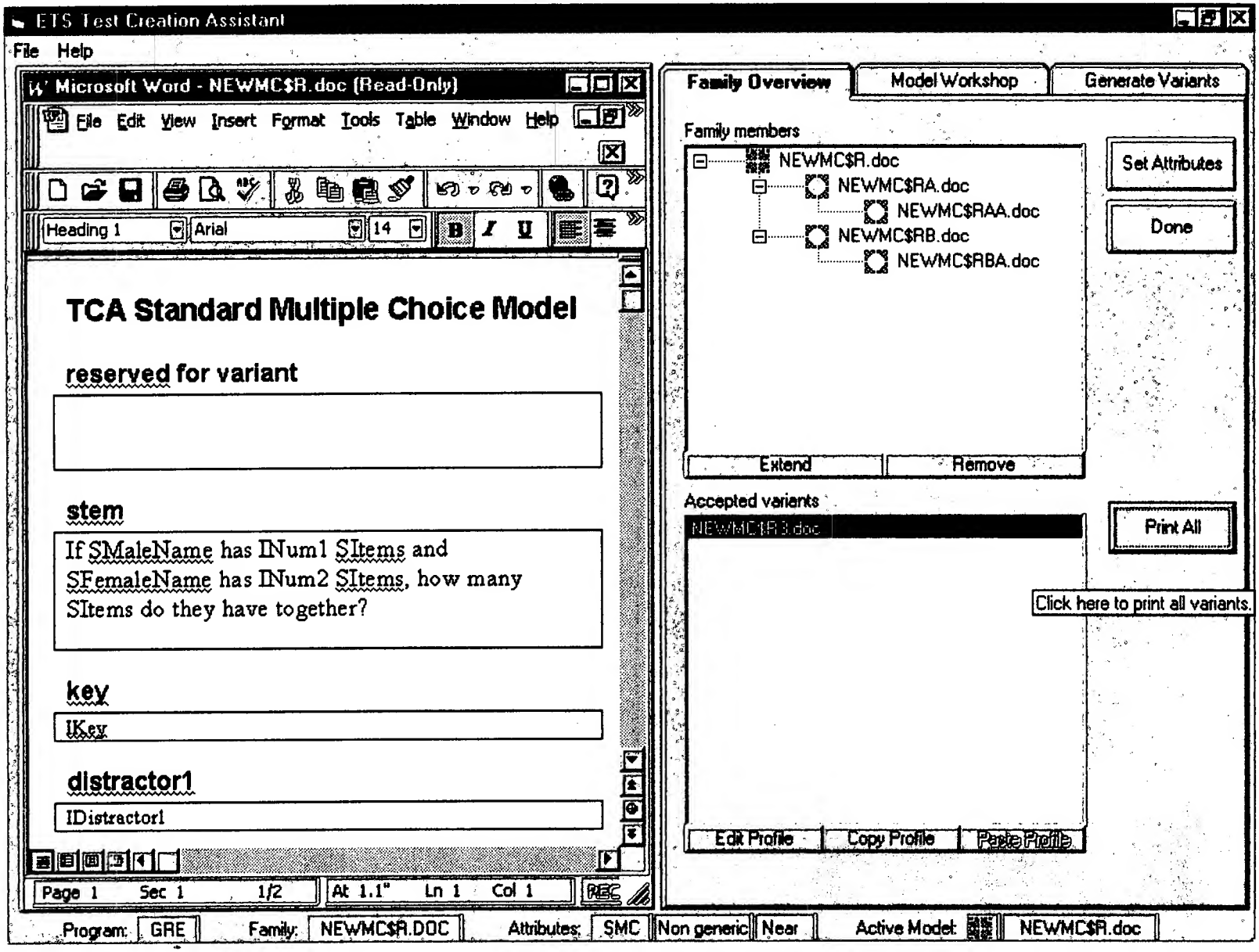

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?
key
IKey
distractor1
IDistractor1
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWMC$R.doc
NEWMC$RA.doc
NEWMC$RAA.doc
NEWMC$RB.doc
NEWMC$RBA.doc
Set Attributes
Done
Extend
Remove
Accepted variants
NEWMC$R3.doc
Print All
Click here to print all variants.
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC
Non generic
Near
Active Model:
NEWMC$R.doc

FIG. 79

Variables and constraints for model NEWMC$R

Variables:
- Variable name: SMaleName
  - Type: String
  - Status: Enabled
  - Checksum: Enabled
  - Indexed: False
  - Values:
    - John
    - Tom
    - Richard
    - Michael
    - Steve
    - Phil
    - Jeff
    - Peter
    - Harry
- Variable name: INum1
  - Type: Integer
  - Status: Enabled
  - Checksum: Enabled
  - Is independent = True, Range: from 2 to 26 by 3
- Variable name: SItems
  - Type: String
  - Status: Enabled
  - Checksum: Enabled
  - Indexed: False
  - Values:
    - apples
    - oranges
    - pears
    - marbles
    - pennies
    - comic books
    - pieces of bubble gum
    - pencils
    - crayons
- Variable name: SFemaleName
  - Type: String
  - Status: Enabled
  - Checksum: Enabled
  - Indexed: False
  - Values:
    - Mary
    - Sharon
    - Tina
    - Michelle

FIG. 80A

Susan
Linda
Crystal
Deidre
Variable name: INum2
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = True, Range: from 2 to 27 by 5
Variable name: IKey
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor1
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor2
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor3
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor4
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Constraints:
Variation constraints:
Constraint: IKey=INum1+INum2
Status: Enabled
Constraint: INum1=/=INum2
Status: Enabled
Distractor constraints:
Constraint: IDistractor1=INum1+INum2+2*min(INum1,INum2)
Status: Enabled
Constraint: IDistractor2=2*INum1+INum2
Status: Enabled
Constraint: IDistractor3=INum1+INum2+7

FIG. 80B

Status: Enabled
Constraint: IDistractor4=IKey-3
Status: Enabled

FIG. 80C

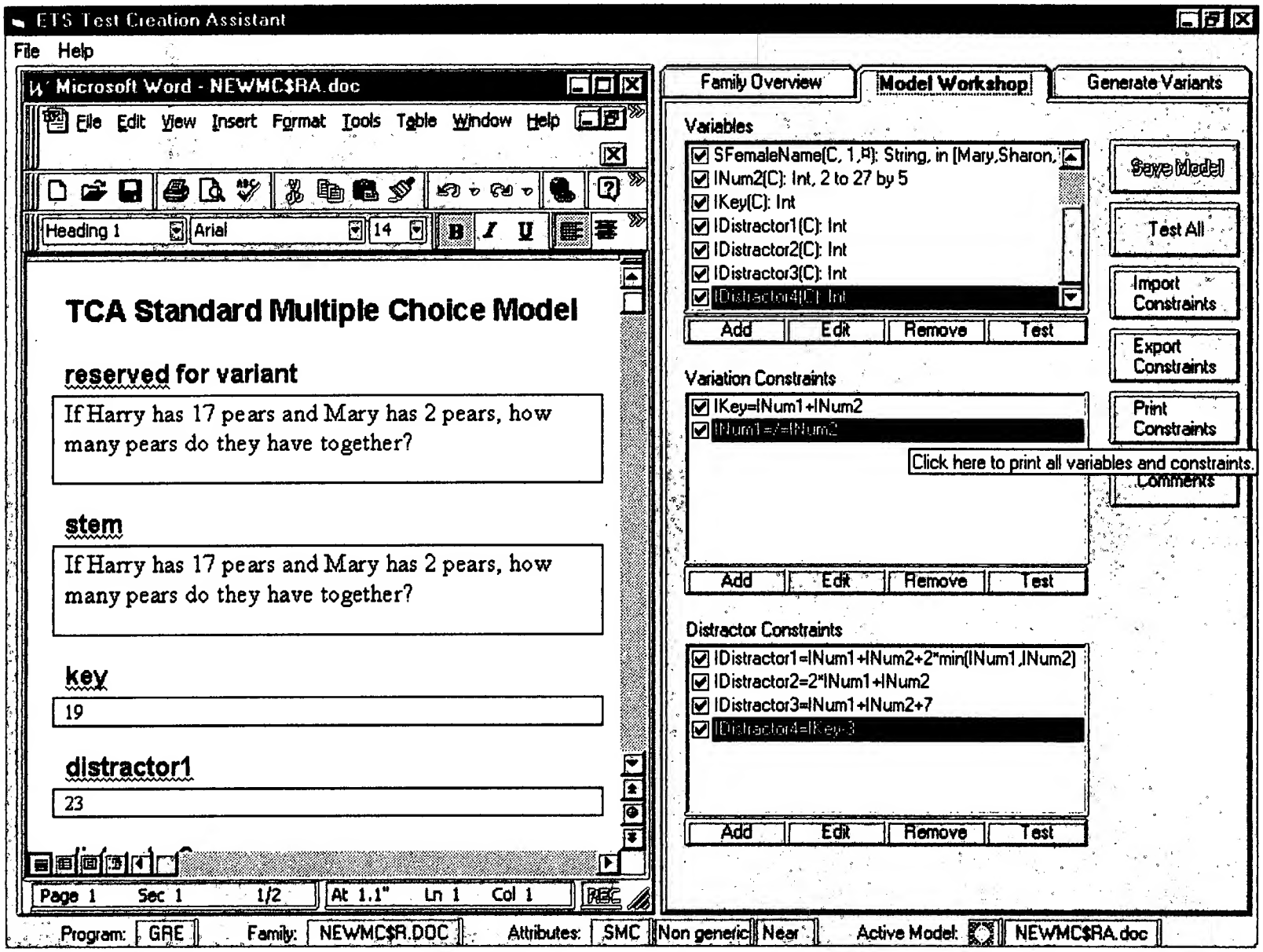

ETS Test Creation Assistant
File Help
Microsoft Word - NEWMC$RA.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Standard Multiple Choice Model
reserved for variant
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
stem
If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?
key
19
distractor1
23
Page 1 Sec 1 1/2
At 1.1" Ln 1 Col 1
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,R): String, in [Mary,Sharon,
INum2(C): Int, 2 to 27 by 5
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Click here to print all variables and constraints.
Variation Constraints
IKey=INum1+INum2
INum1>/=INum2
Add Edit Remove Test
Distractor Constraints
IDistractor1=INum1+INum2+2*min(INum1,INum2)
IDistractor2=2*INum1+INum2
IDistractor3=INum1+INum2+7
IDistractor4=IKey-3
Add Edit Remove Test
Program: GRE
Family: NEWMC$R.DOC
Attributes: SMC Non generic Near
Active Model: NEWMC$RA.doc

FIG. 81

Variables and constraints for model NEWMC$RA

Variables:
  Variable name: SMaleName
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      John
      Tom
      Richard
      Michael
      Steve
      Phil
      Jeff
      Peter
      Harry
  Variable name: INum1
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = True, Range: from 2 to 26 by 3
  Variable name: SItems
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      apples
      oranges
      pears
      marbles
      pennies
      comic books
      pieces of bubble gum
      pencils
      crayons
  Variable name: SFemaleName
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      Mary
      Sharon
      Tina
      Michelle

FIG.82A

Susan
Linda
Crystal
Deidre
Variable name: INum2
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = True, Range: from 2 to 27 by 5
Variable name: IKey
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor1
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor2
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor3
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor4
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Constraints:
Variation constraints:
Constraint: IKey=INum1+INum2
Status: Enabled
Constraint: INum1=/=INum2
Status: Enabled
Distractor constraints:
Constraint: IDistractor1=INum1+INum2+2*min(INum1,INum2)
Status: Enabled
Constraint: IDistractor2=2*INum1+INum2
Status: Enabled
Constraint: IDistractor3=INum1+INum2+7

FIG. 82B

Status: Enabled
Constraint: IDistractor4=IKey-3
Status: Enabled

FIG. 82C

FILE: NEWMC$R.doc

TCA Standard Multiple Choice Model

reserved for variant

stem

If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?

key

IKey

distractor1

IDistractor1

distractor2

IDistractor2

distractor3

IDistractor3

distractor4

IDistractor4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 83

FILE: NEWMC$R3.doc

TCA Standard Multiple Choice Model

reserved for variant

If Tom has 2 comic books and Crystal has 12 comic books, how many comic books do they have together?

stem

If Tom has 2 comic books and Crystal has 12 comic books, how many comic books do they have together?

key

14

distractor1

18

distractor2

16

distractor3

21

distractor4

11

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 84

FILE: NEWMC$R4.doc

TCA Standard Multiple Choice Model

reserved for variant

If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?

stem

If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?

key

19

distractor1

23

distractor2

36

distractor3

26

distractor4

16

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 85

FILE: NEWMC$RA.doc

TCA Standard Multiple Choice Model

reserved for variant

If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?

stem

If Harry has 17 pears and Mary has 2 pears, how many pears do they have together?

key

19

distractor1

23

distractor2

36

distractor3

26

distractor4

16

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 86

FILE: NEWMC$RB.doc

TCA Standard Multiple Choice Model

reserved for variant

stem

If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?

key

IKey

distractor1

IDistractor1

distractor2

IDistractor2

distractor3

IDistractor3

distractor4

IDistractor4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 87

FILE: NEWMC$RBA.doc

TCA Standard Multiple Choice Model

reserved for variant

stem

If SMaleName has INum1 SItems and SFemaleName has INum2 SItems, how many SItems do they have together?

key

IKey

distractor1

IDistractor1

distractor2

IDistractor2

distractor3

IDistractor3

distractor4

IDistractor4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 88

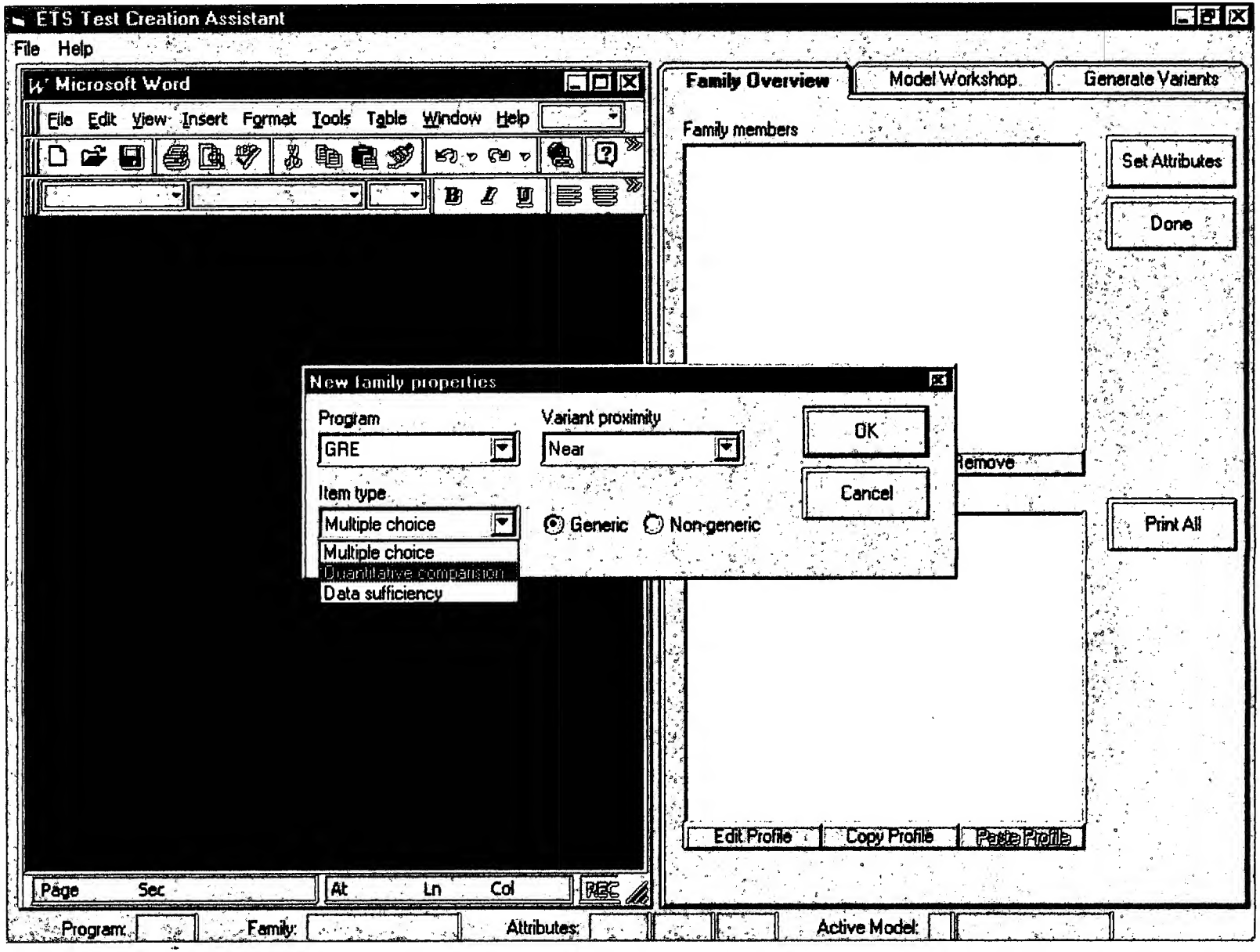


FIG. 89

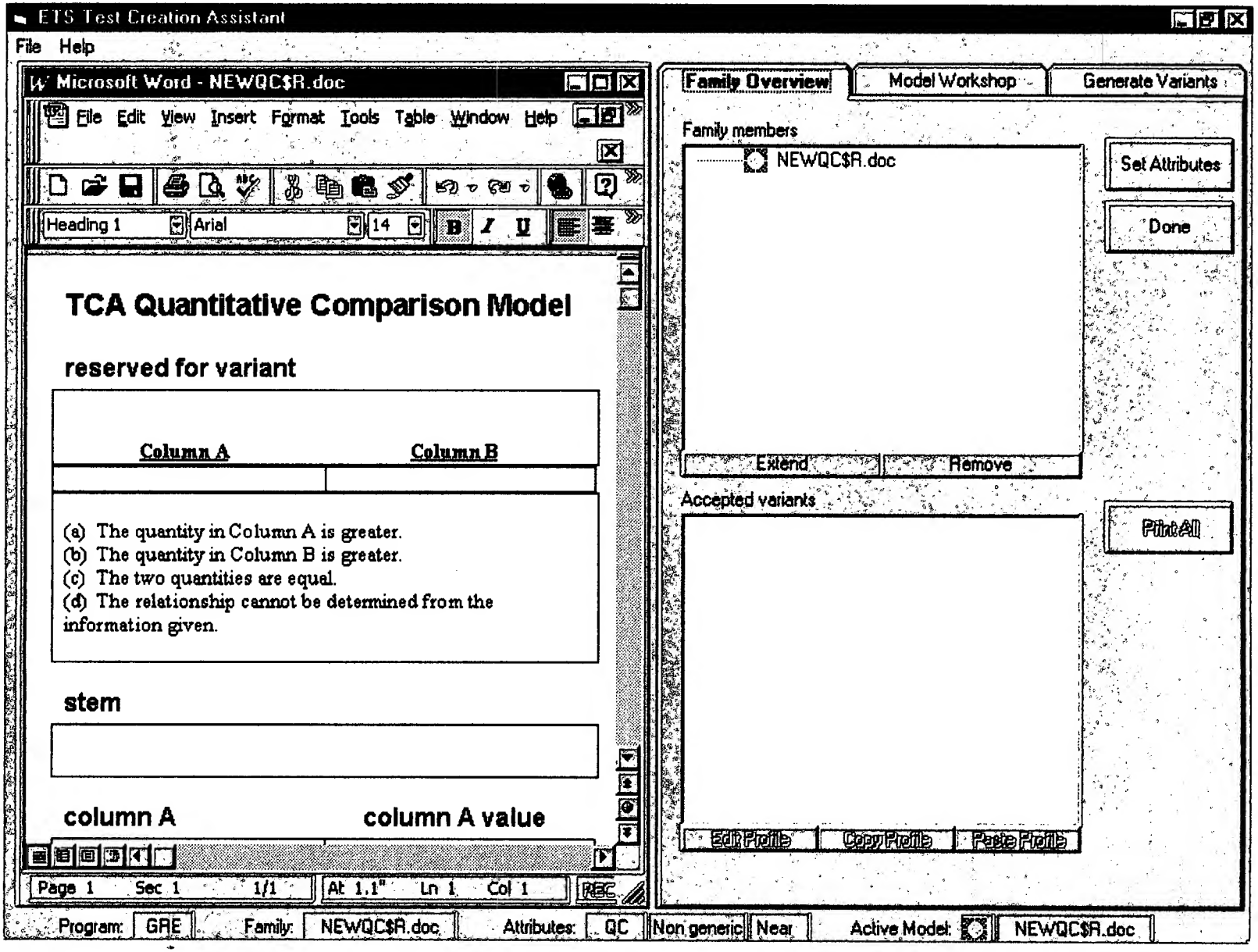

ETS Test Creation Assistant
File Help
Microsoft Word - NEWQC$R.doc
File Edit View Insert Format Tools Table Window Help
Heading 1
Arial
14
TCA Quantitative Comparison Model
reserved for variant
Column A
Column B
(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.
stem
column A
column A value
Page 1 Sec 1 1/1
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWQC$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWQC$R.doc
Attributes: QC
Non generic
Near
Active Model:
NEWQC$R.doc

FIG. 90

FILE: NEWQC$R.doc

TCA Quantitative Comparison Model

reserved for variant

Column A	Column B

(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.

stem

column A **column A value**

column B **column B value**

key

Key

scratch pad

Scratch
Pad
Area

FIG. 91

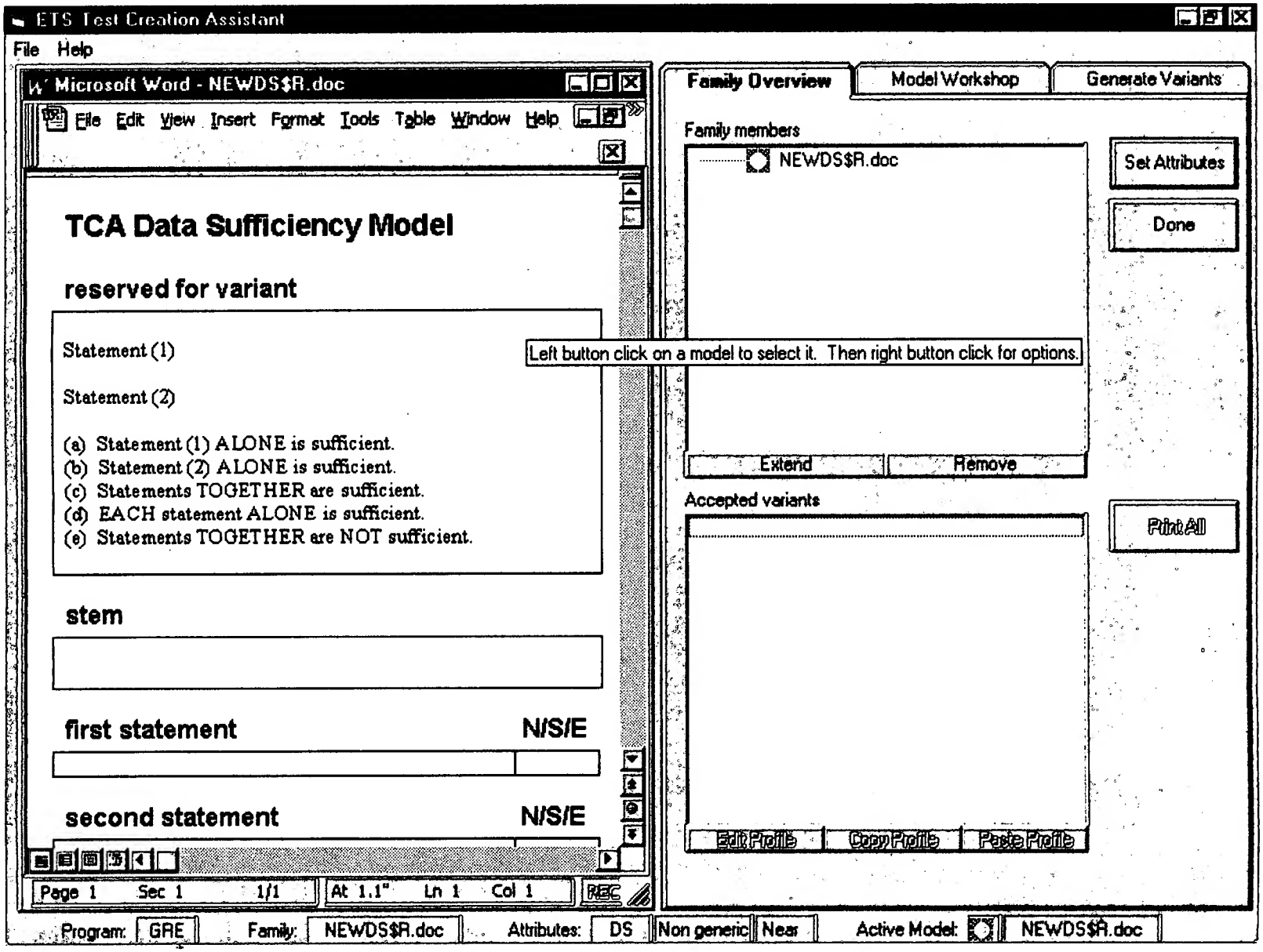

ETS Test Creation Assistant
File Help
Microsoft Word - NEWDS$R.doc
File Edit View Insert Format Tools Table Window Help
TCA Data Sufficiency Model
reserved for variant
Statement (1)
Statement (2)
(a) Statement (1) ALONE is sufficient.
(b) Statement (2) ALONE is sufficient.
(c) Statements TOGETHER are sufficient.
(d) EACH statement ALONE is sufficient.
(e) Statements TOGETHER are NOT sufficient.
stem
first statement
N/S/E
second statement
N/S/E
Page 1 Sec 1 1/1
At 1.1" Ln 1 Col 1
REC
Family Overview
Model Workshop
Generate Variants
Family members
NEWDS$R.doc
Set Attributes
Done
Left button click on a model to select it. Then right button click for options.
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: NEWDS$R.doc
Attributes: DS
Non generic
Near
Active Model:
NEWDS$R.doc

FIG. 92

FILE: NEWDS$R.doc

TCA Data Sufficiency Model

reserved for variant

Statement (1)

Statement (2)

(a) Statement (1) ALONE is sufficient.
(b) Statement (2) ALONE is sufficient.
(c) Statements TOGETHER are sufficient.
(d) EACH statement ALONE is sufficient.
(e) Statements TOGETHER are NOT sufficient.

stem

first statement **N/S/E**

second statement **N/S/E**

key

Key

scratch pad

Scratch
Pad
Area

FIG. 93

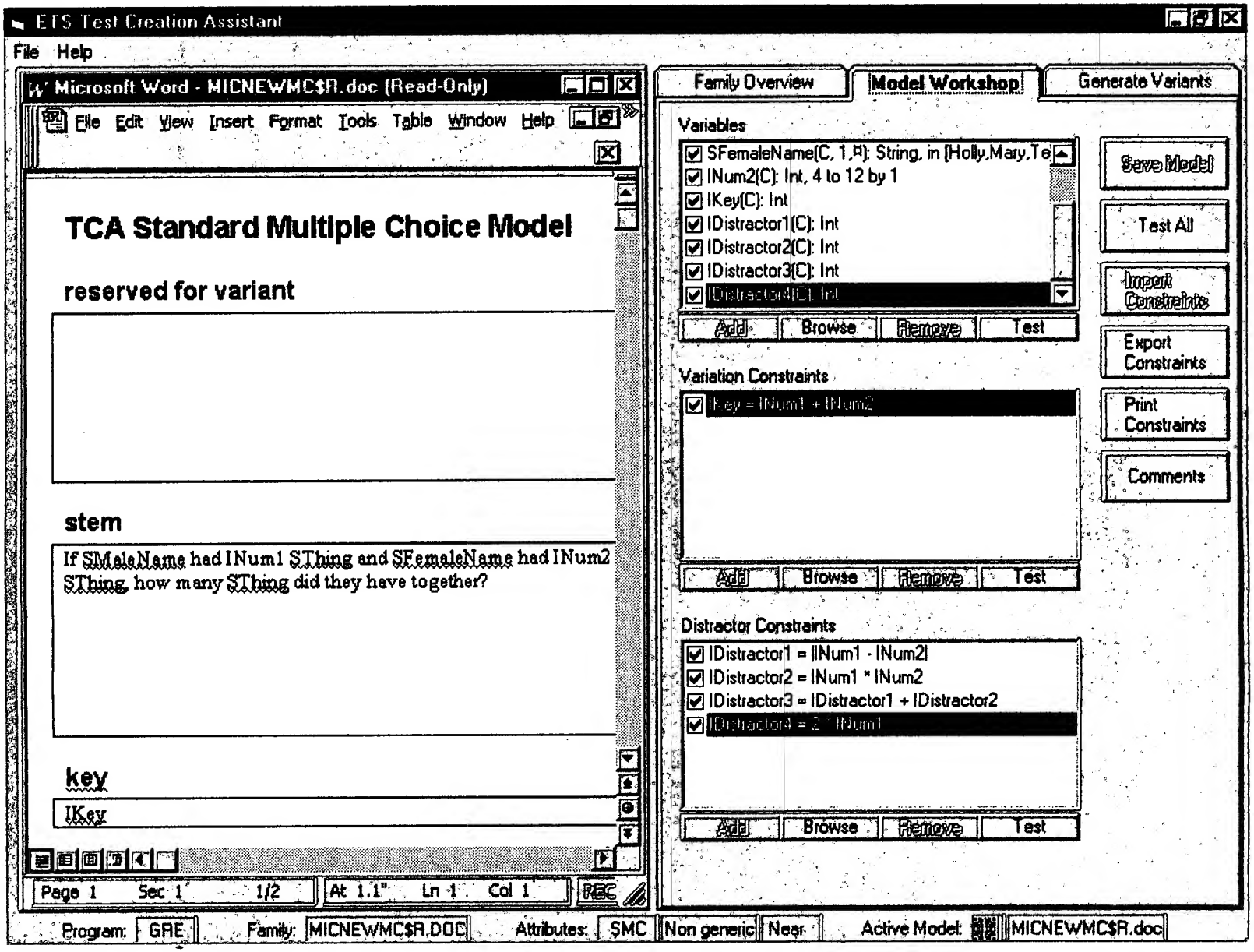

ETS Test Creation Assistant
File Help
Microsoft Word - MICNEWMC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
TCA Standard Multiple Choice Model
reserved for variant
stem
If SMaleName had INum1 SThing and SFemaleName had INum2 SThing, how many SThing did they have together?
key
IKey
Page 1 Sec 1 1/2 At 1.1" Ln 1 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Variables
SFemaleName(C, 1,4): String, in [Holly,Mary,Te
INum2(C): Int, 4 to 12 by 1
IKey(C): Int
IDistractor1(C): Int
IDistractor2(C): Int
IDistractor3(C): Int
IDistractor4(C): Int
Add Browse Remove Test
Variation Constraints
IKey = INum1 + INum2
Add Browse Remove Test
Distractor Constraints
IDistractor1 = INum1 - INum2
IDistractor2 = INum1 * INum2
IDistractor3 = IDistractor1 + IDistractor2
IDistractor4 = 2 * INum1
Add Browse Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: MICNEWMC$R.DOC Attributes: SMC Non generic Near Active Model: MICNEWMC$R.doc

FIG. 94

FILE: MICNEWMC$R1.doc

TCA Standard Multiple Choice Model

reserved for variant

If Bill had 2 apples and Teresa had 5 apples, how many apples did they have together?
A. 3
B. 4
C. 7
D. 10
E. 13
Key is C

stem

If Bill had 2 apples and Teresa had 5 apples, how many apples did they have together?

key

7

distractor1

3

distractor2

10

distractor3

13

distractor4

4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 95

FILE: MICNEWMC$RA.doc

TCA Standard Multiple Choice Model

reserved for variant

If Bill had 2 apples and Joan had 4 apples, how many apples did they have together?
A. 2
B. 4
C. 6
D. 8
E. 10
Key is C

stem

If Bill had 2 apples and Joan had 4 apples, how many apples did they have together?

key

6

distractor1

2

distractor2

8

distractor3

10

distractor4

4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 96

FILE: MICNEWMC$R2.doc

TCA Standard Multiple Choice Model

reserved for variant

If Bill had 2 apples and Joan had 4 apples, how many apples did they have together?
A. 2
B. 4
C. 6
D. 8
E. 10
Key is C

stem

If Bill had 2 apples and Joan had 4 apples, how many apples did they have together?

key

6

distractor1

2

distractor2

8

distractor3

10

distractor4

4

distractor5

Distractor5

distractor6

Distractor6

distractor7

Distractor7

distractor8

Distractor8

scratch pad

Scratch Pad Area

FIG. 97

Variables and constraints for model MICNEWMC$R

Variables:
  Variable name: SMaleName
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      Michael
      Bill
      Harry
      Roger
  Variable name: INum1
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = True, Range: from 2 to 8 by 1
  Variable name: SThing
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      apples
      uzis
  Variable name: SFemaleName
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      Holly
      Mary
      Teresa
      Joan
  Variable name: INum2
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = True, Range: from 4 to 12 by 1
  Variable name: IKey
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = False
  Variable name: IDistractor1
    Type: Integer

FIG. 98A

Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor2
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor3
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Variable name: IDistractor4
Type: Integer
Status: Enabled
Checksum: Enabled
Is independent = False
Constraints:
Variation constraints:
Constraint: IKey = INum1 + INum2
Status: Enabled
Distractor constraints:
Constraint: IDistractor1 = |INum1 - INum2|
Status: Enabled
Constraint: IDistractor2 = INum1 * INum2
Status: Enabled
Constraint: IDistractor3 = IDistractor1 + IDistractor2
Status: Enabled
Constraint: IDistractor4 = 2 * INum1
Status: Enabled

FIG. 98B

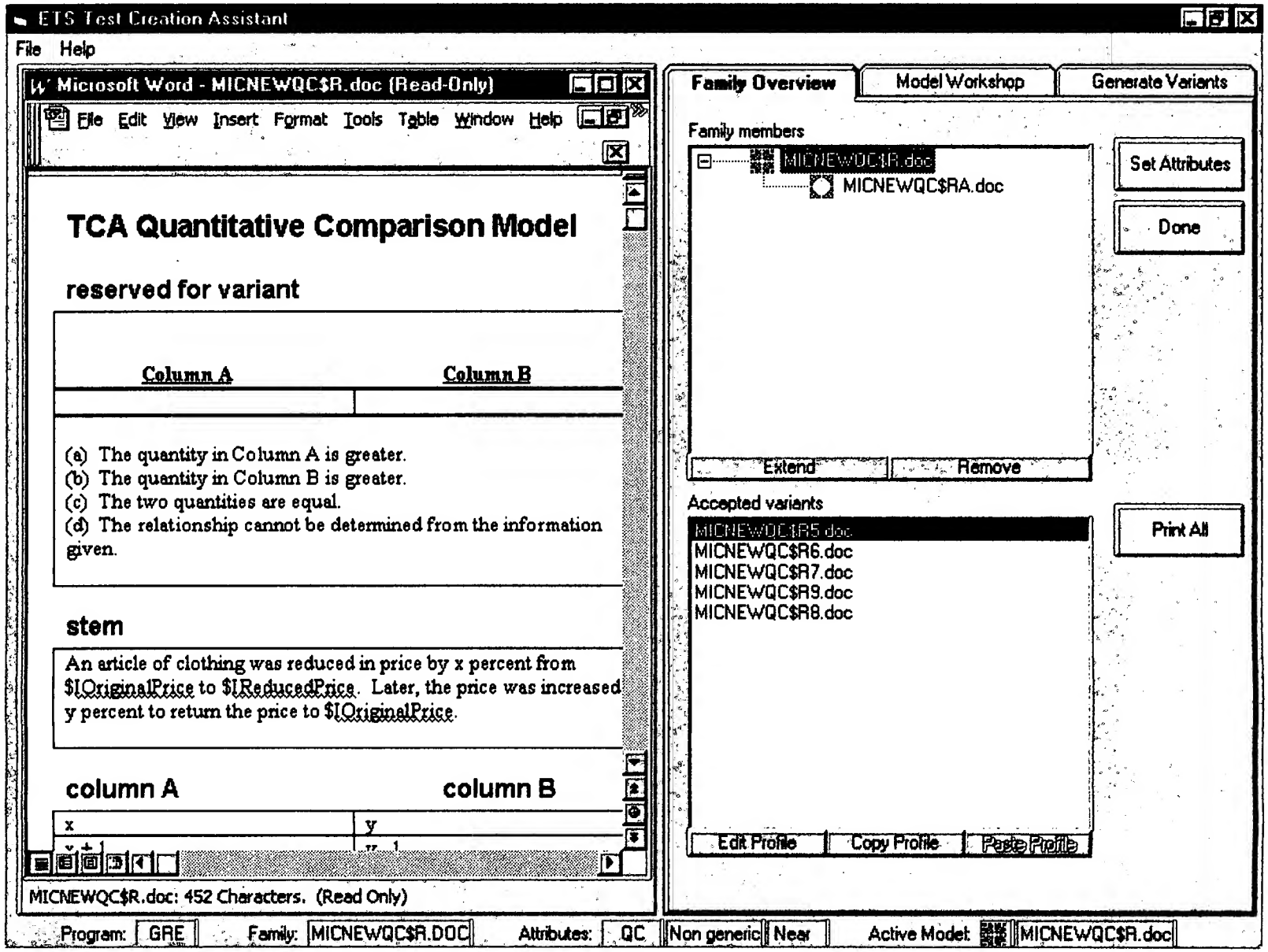

ETS Test Creation Assistant
File Help
Microsoft Word - MICNEWQC$R.doc (Read-Only)
File Edit View Insert Format Tools Table Window Help
TCA Quantitative Comparison Model
reserved for variant
Column A
Column B
(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.
stem
An article of clothing was reduced in price by x percent from $IOriginalPrice to $IReducedPrice. Later, the price was increased y percent to return the price to $IOriginalPrice.
column A
column B
x
y
MICNEWQC$R.doc: 452 Characters. (Read Only)
Family Overview
Model Workshop
Generate Variants
Family members
MICNEWQC$R.doc
MICNEWQC$RA.doc
Set Attributes
Done
Extend
Remove
Accepted variants
MICNEWQC$R5.doc
MICNEWQC$R6.doc
MICNEWQC$R7.doc
MICNEWQC$R9.doc
MICNEWQC$R8.doc
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: MICNEWQC$R.DOC
Attributes: QC
Non generic
Near
Active Model:
MICNEWQC$R.doc

FIG. 99

FILE: MICNEWQC$R.doc

TCA Quantitative Comparison Model

reserved for variant

Column A	Column B

(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.

stem

An article of clothing was reduced in price by x percent from $IOriginalPrice to $IReducedPrice. Later, the price was increased by y percent to return the price to $IOriginalPrice.

column A column B

x	y
x + 1	y - 1

key

Key

scratch pad

Scratch
Pad
Area

FIG. 100

FILE: MICNEWQC$R1.doc

TCA Quantitative Comparison Model

reserved for variant

An article of clothing was reduced in price by x percent from $20 to $16. Later, the price was increased by y percent to return the price to $20.

Column A	Column B
x + 1	y - 1

(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.

stem

An article of clothing was reduced in price by x percent from $20 to $16. Later, the price was increased by y percent to return the price to $20.

column A	column B
x	y
x + 1	y - 1

key

Key

scratch pad

Scratch
Pad
Area

FIG. 101

FILE: MICNEWQC$R5.doc

TCA Quantitative Comparison Model

reserved for variant

An article of clothing was reduced in price by x percent from $25 to $20. Later, the price was increased by y percent to return the price to $25.

Column A	Column B
x + 1	y

(a) The quantity in Column A is greater.
(b) The quantity in Column B is greater.
(c) The two quantities are equal.
(d) The relationship cannot be determined from the information given.

stem

An article of clothing was reduced in price by x percent from $25 to $20. Later, the price was increased by y percent to return the price to $25.

column A	column B
x	y
x + 1	y - 1

key

Key

scratch pad

Scratch
Pad
Area

FIG. 102

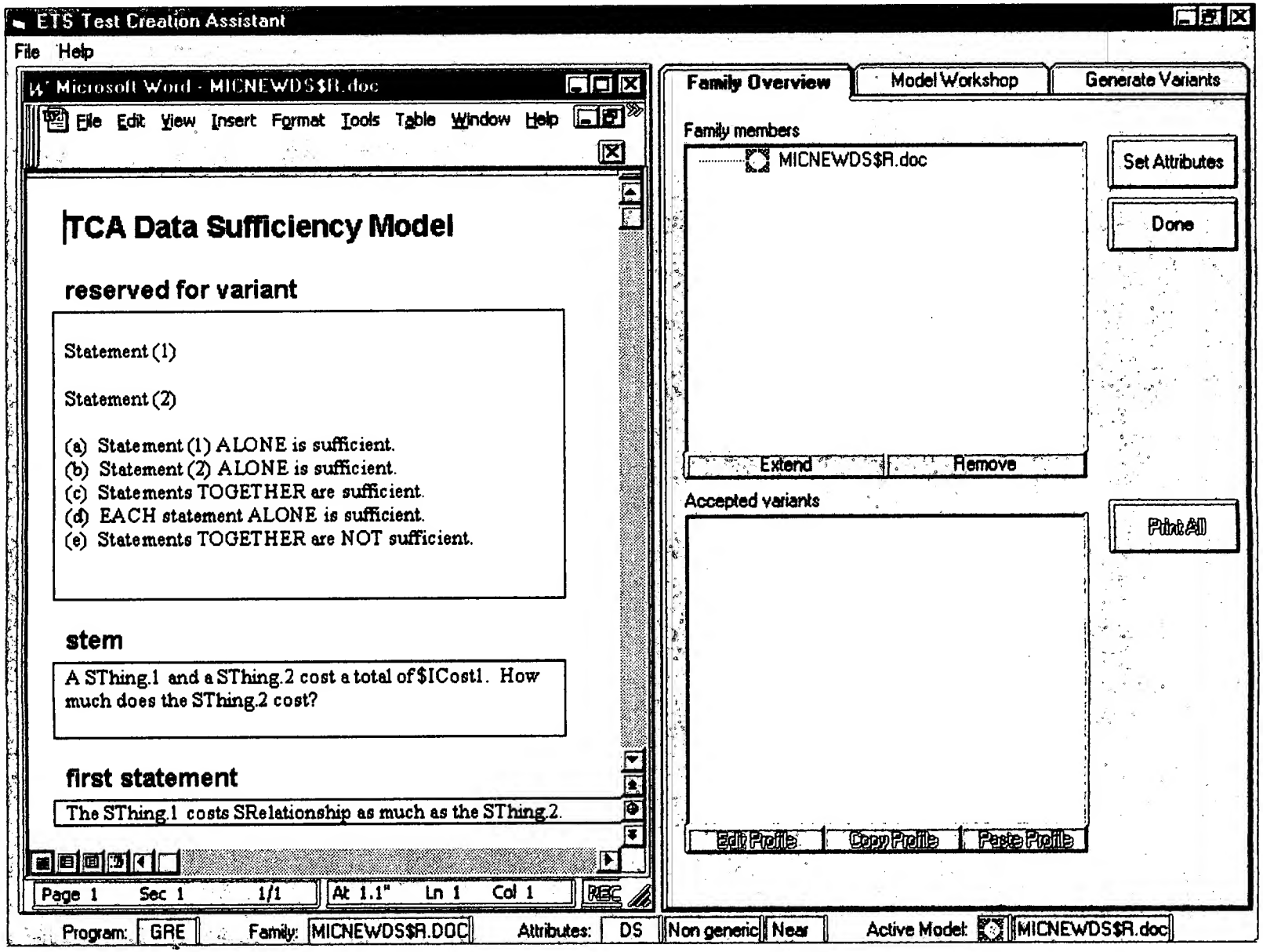

ETS Test Creation Assistant
File Help
Microsoft Word - MICNEWDS$R.doc
File Edit View Insert Format Tools Table Window Help
TCA Data Sufficiency Model
reserved for variant
Statement (1)
Statement (2)
(a) Statement (1) ALONE is sufficient.
(b) Statement (2) ALONE is sufficient.
(c) Statements TOGETHER are sufficient.
(d) EACH statement ALONE is sufficient.
(e) Statements TOGETHER are NOT sufficient.
stem
A SThing.1 and a SThing.2 cost a total of $ICost1. How much does the SThing.2 cost?
first statement
The SThing.1 costs SRelationship as much as the SThing.2.
Page 1 Sec 1 1/1 At 1.1" Ln 1 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Family members
MICNEWDS$R.doc
Set Attributes
Done
Extend
Remove
Accepted variants
Print All
Edit Profile
Copy Profile
Paste Profile
Program: GRE
Family: MICNEWDS$R.DOC
Attributes: DS
Non generic
Near
Active Model:
MICNEWDS$R.doc

FIG. 103

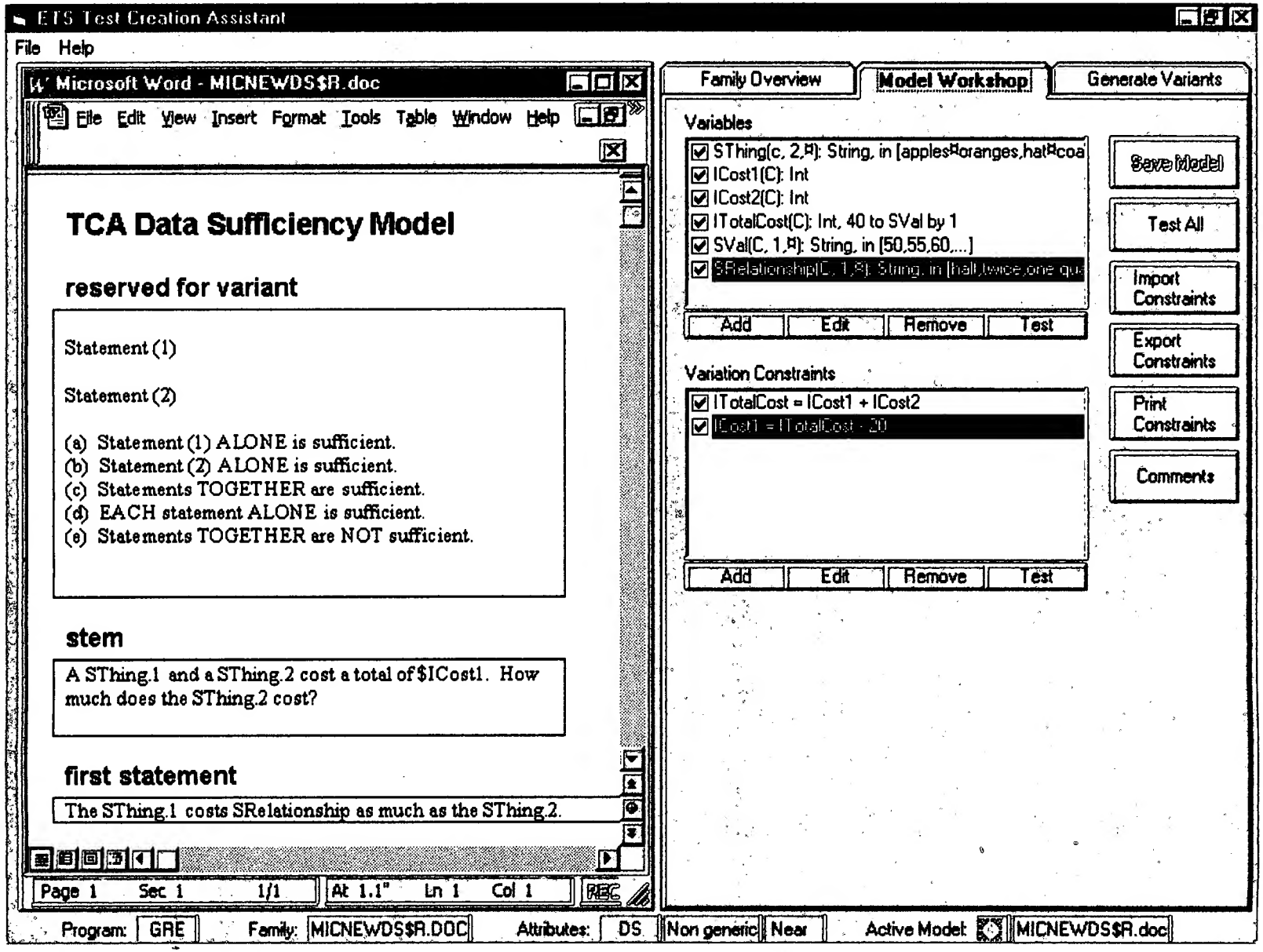

ETS Test Creation Assistant
File Help
Microsoft Word - MICNEWDS$R.doc
File Edit View Insert Format Tools Table Window Help
TCA Data Sufficiency Model
reserved for variant
Statement (1)
Statement (2)
(a) Statement (1) ALONE is sufficient.
(b) Statement (2) ALONE is sufficient.
(c) Statements TOGETHER are sufficient.
(d) EACH statement ALONE is sufficient.
(e) Statements TOGETHER are NOT sufficient.
stem
A SThing.1 and a SThing.2 cost a total of $ICost1. How much does the SThing.2 cost?
first statement
The SThing.1 costs SRelationship as much as the SThing.2.
Page 1 Sec 1 1/1 At 1.1" Ln 1 Col 1 REC
Family Overview
Model Workshop
Generate Variants
Variables
SThing(c, 2,R): String, in [apples¤oranges,hat¤coa
ICost1(C): Int
ICost2(C): Int
ITotalCost(C): Int, 40 to SVal by 1
SVal(C, 1,R): String, in [50,55,60,...]
SRelationship(C, 1,R): String, in [half,twice,one qu
Add Edit Remove Test
Variation Constraints
ITotalCost = ICost1 + ICost2
ICost1 = ITotalCost - 20
Add Edit Remove Test
Save Model
Test All
Import Constraints
Export Constraints
Print Constraints
Comments
Program: GRE Family: MICNEWDS$R.DOC Attributes: DS Non generic Near Active Model: MICNEWDS$R.doc

FIG. 104

FILE: MICNEWDS$R.doc

TCA Data Sufficiency Model

reserved for variant

Statement (1)

Statement (2)

(a) Statement (1) ALONE is sufficient.
(b) Statement (2) ALONE is sufficient.
(c) Statements TOGETHER are sufficient.
(d) EACH statement ALONE is sufficient.
(e) Statements TOGETHER are NOT sufficient.

stem

A SThing.1 and a SThing.2 cost a total of $ICost1. How much does the SThing.2 cost?

first statement

The SThing.1 costs SRelationship as much as the SThing.2.

second statement

The SThing.1 costs $ICost2.

key

Key

scratch pad

Scratch
Pad
Area

FIG. 105

Variables and constraints for model MICNEWDS$R

Variables:
  Variable name: SThing
    Type: String
    Status: Enabled
    Checksum: Disabled
    Indexed: True
    Value Sets:
      Values:
        1. apples
        2. oranges
      Values:
        1. hat
        2. coat
  Variable name: ICost1
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = False
  Variable name: ICost2
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = False
  Variable name: ITotalCost
    Type: Integer
    Status: Enabled
    Checksum: Enabled
    Is independent = True, Range: from 40 to SVal by 1
  Variable name: SVal
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      50
      55
      60
      65
  Variable name: SRelationship
    Type: String
    Status: Enabled
    Checksum: Enabled
    Indexed: False
    Values:
      half
      twice

FIG. 106A

one quarter
three times
Constraints:
Variation constraints:
Constraint: ITotalCost = ICost1 + ICost2
Status: Enabled
Constraint: ICost1 = ITotalCost - 20
Status: Enabled

FIG. 106B

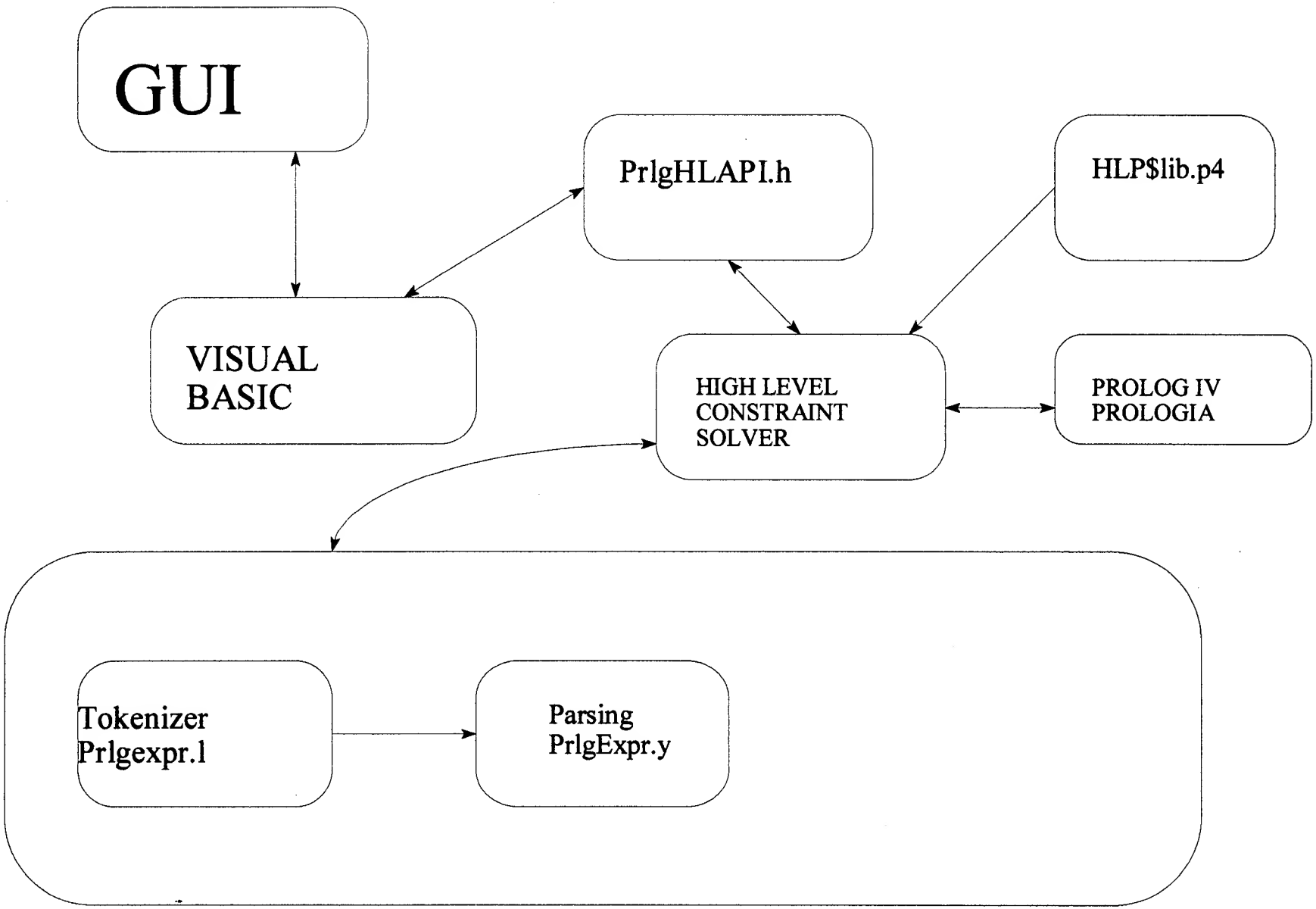

GUI
PrlgHLAPI.h
HLP$lib.p4
VISUAL BASIC
HIGH LEVEL CONSTRAINT SOLVER
PROLOG IV PROLOGIA
Tokenizer Prlgexpr.l
Parsing PrlgExpr.y

FIG. 107